OCTOBER 1961 • 40 CENTS

Consumer BULLETIN

The original consumer testing magazine

ACME

Tests of 24 CLOTHES DRYERS

MOVIE CAMERAS

Zoom type, 8 mm, with electric eye

* **SPRAY STARCHES**
* **Water supply—serious contamination possible**
* **EXTERIOR LATEX PAINTS—II**
* **The mystery of the butylated twins—**
  A study of two questionable food additives
* **Furnace repair—gyp operators are busy**
* **Appliance servicing—A consumer complains**

PUBLISHED SINCE 1928
BY CONSUMERS' RESEARCH, INC., WASHINGTON, NEW JERSEY

COMPLETE CONTENTS ON PAGE 5

Taking it easy

in doing the home laundry

Spray starches

FOR as little as $300, the American housewife can buy a washer and a dryer that will take a lot—but not all—of the labor out of home laundering. Statisticians have estimated that eight loads is the average amount of household laundry per week.

Manufacturers of laundry supplies, like manufacturers of equipment, are ingenious in developing products that are designed to make life easier for the homemaker. One of the interesting ventures in convenience is aerosol-packaged spray starch. New brands are appearing on the store shelves from month to month.

The benefits to be gained are not directed solely to the consumer. Starch manufacturers have been hard pressed to counter a declining market for their products. Blamed for the decline in large part is wash-and-wear cotton clothing, which has a resin "finish" already applied when it is purchased. Another important factor in the success of aerosol-packaged starches is the reluctance of the housewife to introduce another operation into the laundering routine.

To obtain some idea of what these new products will do, Consumers' Research purchased seven brands of spray starch in stores in or near Washington, New Jersey. Most of them were priced at around 69 cents for a 16-ounce spray can, though prices ranged from 39 cents for 15 ounces net weight to 69 cents for 14 ounces. Though the prices are considerably lower than when the products first appeared, the spray starch is no bargain. It costs 85c to $1.50 a quart, assuming that all the contents will be used (and they can't be, sometimes).

The highest-priced non-aerosol starches, the plastic "permanent" starches in bottles, that last from about 5 up to 10 launderings, sell at around 60 to 70 cents a quart. Other ready-to-use liquid starches sell at about 15 cents a quart for vegetable starches, 35 cents a quart for liquid synthetic carboxymethyl cellulose (CMC) starches.

The starches that offer the most in economy are the dry vegetable starches, such as *Argo* and *Linit*, with which most housewives are familiar. In use, they are dissolved first in a measured amount of cold water, then a quantity of boiling water is added. They sell at around 15 cents for a 1-pound package, which will make about 15 quarts of medium starch. Starching in a washer is relatively easy with boiled starches, but pre-sorting is required so that a whole load is of "starchable" material. Cold-water starches cost about the same per quart, but provide a less stiff finish to fabrics.

Higher in price than these two types are the liquid starches, both vegetable starches and synthetic starches, which do away with the need for making a solution from dry starch. All that is needed is to measure and dilute as instructions recommend.

So-called "permanent" liquid starches last through several washes. Care must be taken to control stiffening carefully. Otherwise garments will become too stiff, and the unwanted stiffness is hard to wash out.

One disadvantage of starching, if a dryer is used in the household, is that the starched items must be dried separately, or some of the starch will transfer to non-starched textiles (and also the dryer drum must be wiped off with a damp cloth).

Consumers' Research tried seven different brands of spray starches, including both vegetable starches and synthetic starches (probably polyvinyl acetate), using men's wash-and-wear shirts of either treated cotton or *Dacron* polyester and cotton blend fabric and a woman's black cotton blouse which was not a wash-and-wear fabric. Overall, the results

(Continued on page 29)

The Consumers' Observation Post

WILL A DENTIFRICE containing a fluoride compound be effective in preventing caries (tooth decay) or won't it? The American Dental Association, breaking its own precedents, has given Crest tooth paste the A.D.A.'s recognition as "an effective decay preventive dentifrice." The essential ingredient in this case is stannous fluoride. This "endorsement" by the A.D.A. has been severely criticized in public by Dr. LeRoy S. M. Miner, past president of the A.D.A. and former dean of the Harvard School of Dental Medicine. Dr. Miner points out that dentistry "has long known that a tooth paste is no more than an adjunct to the toothbrush, making the brushing of the teeth a more pleasant habit and possibly having some cosmetic effect. But when people are led to believe that a tooth paste can solve their dental problems, they are in danger. And when a professional group helps to make this impression, it is failing in its prime responsibility to the public."

* * *

PAINTING THE HOUSE, outside and in, is the way many a do-it-yourself homeowner spends his vacations and week ends. What with the keen competition in the field, several big firms on the west coast are making a bid for sales of their products by offering special assistance. One of these, W. P. Fuller & Co., is reported to be testing a plan in San José, California, of renting everything a man needs for the job, from brushes and rollers to overalls, caps, and drop cloths, for $10 a week or $5 a week-end. Sounds like a good idea.

* * *

WASHING UNDERGARMENTS or clothes made with elastic at the waistline or elsewhere is something of a problem. In a recent study by home economists at the Illinois Experiment Station, it was found possible to wash both elastic braids (for waistline fit) and knitted elastic fabrics used in foundation garments 40 times in an automatic washer at temperatures as high as 135°F, using any of 24 soaps and synthetic detergents, without damage. The trick was to wash clean terry cloth towels with the elastic garments as a buffer. Results were not favorable when soiled sheets and pillowcases were used instead of clean towels. The difference is apparently due to the presence of traces of fatty material in soiled sheets and pillowcases.

* * *

THAT FRONTIER CABIN advertised as "big enough for 2-3 kids" has been the subject of many complaints to the National Better Business Bureau. The price of this "huge, western-style cabin" was only $1 and that should have been a tip-off on what to expect. The NBBB reported that the cabin was made of thin plastic on which illustrations of logs, roof, and door had been printed; although the advertisement referred to the item as "huge," it actually was designed for fitting over a bridge table. Some of the dissatisfied purchasers complained that they did not want their children to play in the "cabin" because of the flimsiness of the plastic material. Many who failed to read the description carefully were greatly disappointed in the product.

* * *

HOW LONG should you expect a major household appliance to last? On the basis of the last census, the Research Service of the U. S. Department of Agriculture estimates that a family buying a new electric refrigerator or range will keep it about eight years. An average life expectancy of either appliance is around 16 years. The family buying a new television set is expected to keep it about 11 years, a used set about six years. An electric sewing machine is kept about 16 years. An earlier survey indicated that families expected about nine years' service from new washers, no matter what the type.

SUNLIGHT is an enemy of aging skin. Now that the summer is over, many women probably realize the validity of this observation. In a symposium last summer, several dermatologists agreed that skin deterioration from exposure to the sun's rays is most severe in older persons. They considered it increasingly important to educate the public to the long-range damaging effect of sunlight on the skin in order to reduce the hazards of overexposure, which are particularly serious in the Southwestern section of the U. S.

* * *

THE ELECTRIC DISHWASHER is becoming increasingly popular. As with any (comparatively) new appliance, there are problems still to be solved that cause dissatisfaction in performance. Manufacturers of detergents, as well as appliance firms, are working to improve methods and materials. A helpful release from Calgon, Inc., called "Water Ways," reports that old silver-plated flatware may develop a brownish discoloration due to chemical reaction of the detergent and the base metal where it is exposed. The only remedy in such cases is to have the flatware replated. Soft (lead) glass or "crystal" should not be put in the dishwasher. It may streak or etch and the original appearance cannot be readily restored. China patterns not protected by a glaze may eventually fade due to the high temperature and force of the water. Cloudy glasses and dishes may result from the use of too much detergent. Too little detergent results in a greasy film or food stains on dishes. If dishes are to stand overnight, it is desirable to pre-rinse those that are quite soiled.

* * *

RECORDINGS FOR THE BLIND, both on disk and tape, are increasing in number. The Library of Congress has been producing books on 33-1/3 rpm. records since 1934 and makes players available as well for the "legally blind." In spite of the limited market for "talking books," two firms specializing in the field have turned out something like 50 titles between them. Prices, according to The Wall Street Journal, range from $1.49 for "A Child's Garden of Verses," by Robert Louis Stevenson, with 45 minutes of listening, to $34.95 for a Catholic edition of the Bible that runs two sides of 30 seven-inch disks. Audio Book Co., St. Joseph, Mich., is the older of the two concerns. The other is Libraphone of Long Branch, N. J. Still another interesting development in the field is the work of Prof. T. A. Benham of the physics department of Haverford (Penna.) College who gets out two monthly publications on tape; Science Recorded, which is a monthly selection of pertinent articles from some 30 scientific and technical journals; and Timely Topics, a newsy magazine, not so technical, of events in science as reported in current newspapers and magazines. Dr. Benham is also instituting science recordings for blind children in two age groups, 9-12 and 12-15, for schools and libraries.

* * *

LACK OF EXERCISE is reported to be a more common cause of obesity in adolescents than overeating. Teen-age overweight is a complex medical problem, but, according to Professor Jean Mayer, Harvard School of Public Health, the obese teen-ager generally eats less than the non-obese. Concentration on following a diet sheet is therefore not likely to be as helpful as instituting a program of regular exercises, walking, dancing, tennis, swimming, skiing, running. He pointed out that the teen-ager who is already reasonably active may increase his food intake when he steps up physical activity, but noted that there is a "wide sedentary zone where increasing exercise from very low levels of activity to somewhat higher levels does not increase appetite."

(The continuation of this section is on page 37)

Consumer Bulletin

THE ORIGINAL CONSUMER INFORMATION MAGAZINE

Consumers' Research is a non-profit institution. It is organized and operates as a scientific, technical, and educational service for consumers. The organization has no support from business or industry. Its funds come solely from the ultimate consumers who read Consumer Bulletin.

Scientific and technical staff, editors, and associates: F. J. Schlink, R. Joyce, D. C. Aten, M. C. Phillips, Erma A. Hinek, F. X. Hinek, Donald M. Berk, and A. R. Greenleaf. Editorial Assistants: Mary F. Roberts, B. Baam, and Ellen J. Snyder. Business Manager: Edith B. Armbrecht.

Consumer Bulletin is issued monthly by Consumers' Research, Inc., at Washington, N.J. Copyright, 1961, by Consumers' Research, Inc., Washington, N. J.; all rights reserved. Subscription price (12 issues), $5 per year, U.S.A. (Canada and foreign, $5.20). For libraries, schools, and colleges, a special subscription of nine monthly Bulletins (October-June, inclusive) is available at $3; Canada and foreign, $3.20.

For a change of address, give your old address as well as your new one, including postal zone number. Allow five weeks for the change to become effective.

Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization.

Note: Consumers' Research does not permit the use of any of the material in its Bulletin for any sales promotion, publicity, advertising, or other commercial purposes. Application for permission to reprint for other purposes should be made by letter to Consumers' Research, Washington, N.J.

Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive, group are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

This publication is authorized to be mailed at the special rates of postage prescribed by Sec. 132.122, Postal Manual.

Entered as second-class matter, November 9, 1934, at the Post Office at Washington, N. J., under the Act of March 3, 1879; additional entry at Easton, Pa. Printed in U.S.A.

VOL. 44, NO. 10 CONTENTS OCTOBER 1961

Spray starches 2
This article includes a comparison of spray starches with vegetable and synthetic starches, and reports on tests of 7 popular brands of spray starches

Zoom movie cameras—8 mm., with electric eye 6
A report on 6 new models

Clothes dryers, gas and electric 10
Consumers' Research discusses proper use of a dryer, choice of the right dryer, costs to dry a load, dryer capacity, and gives ratings of the 24 models tested

The mystery of the butylated twins 18
Consumers' Research tried to find out about the safety of two chemical additives widely used as preservatives in food, but found a barrier of governmental secrecy

Close your door to furnace repairmen who use high-pressure tactics 22
The use of scare tactics and gross misrepresentations, dishonest and fraudulent inspection and repair of hot-air furnaces, charging of exorbitant prices, have been characteristic of a nationally known furnace company

Contamination of the home water supply 24
Gross contamination may occur; if it does, results may be disastrous

Latex paints for exterior use—II 26
Advantages and disadvantages of latex paints, importance of the right primer, tentative ratings of 5 brands

Garden equipment—care for winter storage 28

A homemaker speaks 39
She's unhappy with the ways of appliance servicemen

FEATURES

The Consumers' Observation Post 3

Brief index of Consumer Bulletin, January through September '61 .. 21

Off the editor's chest—Industry fights new regulations for labeling hazardous chemicals 32

Phonograph Records—*Walter F. Grueninger* 34

Ratings of Current Motion Pictures 35

8 mm. electric-eye zoom movie cameras

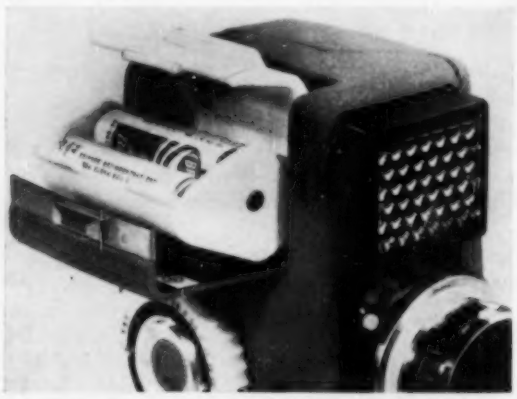
Is the electric-eye zoom-lens 8 mm. movie camera the ultimate in equipment for the home movie maker? Consumers' Research found that although the electric-eye automatic exposure systems on the new movie cameras work rather well, the zoom lenses on the moderate-priced cameras were generally not as good optically as the older separate turret-mounted regular lenses. None of the zoom cameras tested performed optically as well as an inexpensive, $50 single-lens fixed-focus movie camera tested by Consumers' Research several years ago.

THE advent of the automatically-controlled electric-eye exposure system on movie cameras has triggered tremendous interest in 8 mm. movie cameras. Prior to the introduction of the automatic camera, the average home movie maker counted himself very fortunate if he correctly or nearly correctly exposed half of a 50-foot roll of film. Those who introduced automatic cameras claimed in the most ardent and enthusiastic terms that their cameras would assure the proud possessor of getting back 50 feet of perfect exposures on a 50-foot roll of film; all this great accomplishment was to be achieved by merely aiming the camera and pressing a button.

Most of the first owners of electric-eye cameras found out that these soaring promises to home movie makers were not borne out in practice. The early automatic cameras were plagued by various malfunctions and resulting blank or incorrectly-exposed films.

During the past few years automatic electric-eye systems have undergone refinement, and the quality of the cameras has increased to a point where one can expect fairly good exposures on the whole roll of film—though not without a bit of thought and care on the part of the user. Electric-eye cameras do not think for themselves, but rather translate information fed into them into reasonably correct settings for film exposure.

The information needed is the speed of the film and the amount of light that enters the photocell on the camera. Herein lies the catch to automatic exposure control. The amount of light striking the photocell may or may not be representative of the characteristic light of the scene being photographed. If the camera operator keeps the sun at his back, most exposures will be good; however, if the sun or light source is at the side or in front of the camera, there is a strong possibility that more light will strike the photocell than is reflected from the subject, and the electric eye will respond by setting the exposure for the brightest source of light and so will cause marked underexposure of the subject being photographed.

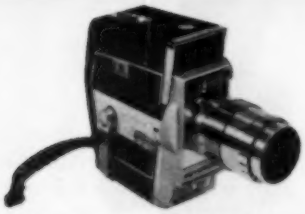


The batteries that power the Konica Zoom 8 Model II fit into a convenient compartment at the top of the camera.

All of the cameras tested had instructions in the manuals for compensating for backlighted subjects and, if the photographer follows the rules, the pictures will normally be correctly exposed; but then, of course, the camera is not the marvelous thinking machine it is claimed to be in the TV commercials or in magazine advertising.

The newest development in movie cameras is the zoom lens. This lens has a variable focal length, and can be adjusted from a short focal length (wide angle) to a long focal length (telephoto) in one smooth operation. Actually there are an infinite number of focal lengths available, from one limit to the other. The zooming operation can be accomplished while

Yashica 8E



Keystone Auto-Zoom K-10

Kodak Zoom 8 Automatic f/1.9

the film is being exposed. The zoom lens is necessarily a complex optical system, so designed that the focal length of the lens can be changed at will without greatly affecting the focus or resolution.

Some of the zoom cameras have coupled optical view-finders in which the field of view changes as the focal length of the zoom lens is changed. Some use the single-lens-reflex principle, wherein a prism diverts to the view-finder some of the light from the scene as it comes through the taking lens. The prism used is of the type that allows most of the light to continue on to expose the film. The reflex view-finder is very desirable, since there is no parallax error and the scene in the finder is the same as that exposed on the film.

In principle the zoom lens would appear to be ideal for application to the home movie camera. However, in practice the zoom lenses that are available at low cost, have some serious shortcomings. On the cameras tested, only one had a lens which gave reasonably good performance over its full range of focal lengths and apertures. (This camera, the *Kodak Zoom Reflex*, had other shortcomings, however, which kept it from deserving an unqualified *A* rating, in CR's opinion.) The other cameras tested had lenses with performance that varied with focal length although, as is generally the case with photographic lenses, they improved in performance as they were stopped down two or three stops.

Two of the six cameras tested, the *Konica* and *Yashica*, are not of the fully-automatic type; the lens openings must be set by the operator, who matches two pointers, or a pointer and a reference mark, as the light changes. Since one hand will be needed for operating the shutter release, and one for the zoom lens, the operator must either set the exposure before each scene, or give up zooming while taking pictures. Actually the photographer has no choice with the *Yashica*, since the meter needles are on top of the camera, and it is impossible to change the exposure setting correctly while one is filming at eye level. The meter needle of the *Konica* is visible in the view-finder and can be adjusted while filming is going on.

All the other movie cameras tested have fully automatic exposure systems that operate continuously as filming proceeds. On the *Keystone* and the *Kodak Zoom Reflex* the automatic system can be disconnected and exposure set manually. This is an advantage for the advanced amateur who may wish to experiment with special effects or use his own judgment in exposing film.

The *Konica* was judged rather complicated for the average home movie maker, but would appeal to the experienced camera fan, because of the flexibility of its controls.

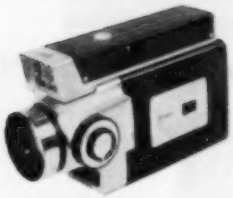
Consumers' Research feels that none of the cameras tested would be *fully* satisfactory for the advanced amateur. The advanced photographer would probably prefer a manually-operated camera or possibly an electric-eye camera (one with provision for manual control) with separate lenses mounted in a turret. In the price range of the cameras tested, CR feels that superior optical performance can be had with separate regular lenses rather than with any of the zoom lenses that were tested. As a matter of fact *none* of the cameras tested showed optical performance as good as that on the inexpensive ($50) *Revere 50* camera tested, and reported in the October 1958 BULLETIN.

The electric-eye exposure systems worked satisfactorily on all the cameras tested, except as noted in the listings. The cameras were all for use with roll film. Prices shown are list prices, but substantial discounts are available to those who will shop around a bit.

The cameras listed are rated on their own scale, as zoom-lens cameras. Their performance is not judged in relation to cameras with lenses of fixed-focal length.

Konica Zoom 8 Model II

Bell & Howell Model 310



Kodak Zoom 8 Reflex Automatic

A–

Bell & Howell, Model 310 (Bell & Howell, 7100 McCormick Rd., Chicago 45) $99.95. Camera made in U. S. A.

Description: Size, 6 in. high x 6¼ in. wide x 2½ in. thick. Weight, 3 lb. Fixed-focus *f*/2.3 *Comat Zoom* lens of 9.7 to 29.2 mm. focal length (made in Japan). Fully automatic electric-eye-controlled diaphragm. Optical zoom view-finder coupled to lens. Electric-eye system can be set for film speeds of 5, 10, 16, 20, 25, 32, 40. Spring motor, wound by means of a crank. (Motor stops automatically before speed becomes too slow.) Single motor speed of 16 frames per second (fr.p.s.). Self-setting footage indicator shows number of feet of film used. Die-cast body with gray crackle finish.

Lens is "zoomed" manually by a lever on the lens mount. A signal in the view-finder shows green if there is enough light to take pictures. No manual setting of *f*-stop scale is possible.

Performance: Easy to load, but motor was rather hard to wind. Motor ran 50 sec. on full wind. Frame speed, about correct at full wind, but began to slow down somewhat after 25 sec. Quality of lens: at normal focal length, fairly good at *f*/2.3, good at *f*/8; at telephoto setting, poor at *f*/2.3, fair at *f*/8; at wide-angle setting, fairly good at *f*/2.3, good at *f*/8. This camera was very easy to use due to its few and simple controls. **1**

Kodak Zoom 8 Reflex Automatic (Eastman Kodak Co., Rochester, N. Y.) $190. Made in U.S.A.

Description: Size, 5 in. high x 8½ in. long x 3½ in. thick. Weight, 3 lb. 5 oz. Lens, *Kodak Zoom Ektanar* *f*/1.9 of 9 to 24 mm. focal length with 3 positions for focusing. Fully automatic electric-eye-controlled disphragm. Reflex view-finder (through the taking lens) has adjustable focus on eyepiece. Electric-eye system can be set for film speeds of 10, 16, 20, 25, and 40. Spring motor is wound by means of a folding key. Motor does not stop automatically before speed becomes too slow. Single speed of 16 fr.p.s. Self-setting footage indicator shows number of feet of film left to be exposed. Die-cast and stamped metal body with black leatherette covering.

Lens is "zoomed" manually by a large knob on side of camera or by power of the spring motor, as desired. A signal in the view-finder indicates whether or not there is enough light for proper exposure. The exposure system can be set for manual operation. There is an *f*-stop scale on the side of the camera.

Performance: Easy to load and wind. Footage indicator was located at the front of the camera (undesirable). The cover of the film chamber was rather difficult to remove for changing film. Motor ran about 55 sec. on full wind but began to slow at 45 sec. Frame speed was slightly fast at full wind, approximately correct after 25 sec. Quality of lens: good at *f*/1.9 and *f*/8, at all focal lengths. **2**

B. Intermediate

Keystone Auto-Zoom K-10 (Keystone Camera Co. Inc., Boston) $180. Made in U.S.A.

Description: Size, 5¼ in. high x 7½ in. long x 2½ in. thick. Weight, 2 lb. 13 oz. *f*/1.8 *Keystone Zoom* lens of 9 to 27 mm. focal length in focusing mount. Optical zoom view-finder coupled to lens. Electric-eye system can be set for film speeds of 10, 16, 20, 25, 32, and 40. Spring motor is wound by means of a folding crank. Motor stops automatically before speed becomes too slow. Single motor speed of 16 fr.p.s. Self-setting footage indicator shows number of feet of film unexposed. Die-cast body with gray crackle finish.

Lens is "zoomed" by spring motor power or manually by use of knob on side of body. *f*-stop settings are visible in the view-finder. An indicator shows red if there is insufficient light to take pictures. Exposure system can be set for manual operation. Type A filter (for use of indoor film outdoors) is built into the camera. It is moved into position by a lever on the lens board.

Performance: Easy to load. Motor runs 35 sec. on full wind (a relatively short time). Frame speed was slightly fast at full wind, but essentially correct after 17 sec. Quality of lens: at normal focal length, fair at *f*/1.8 and *f*/8; at the wide-angle setting, fair at *f*/1.8 and *f*/8; at the telephoto setting, poor at *f*/1.8, fair at *f*/8. **2**

Konica Zoom 8, Model II (Konica Camera Co., 76 W. Chelton Ave., Philadelphia 44) $230. Made in Japan.

Description: Size, 6¼ in. high x 4½ in. long x 3¼ in. thick. Weight, 2 lb. 14 oz. Lens, *V-Hexanon* *f*/2 zoom lens of 12 to 32 mm. focal length in focusing

mount. Exposure meter is coupled to diaphragm but it is not fully automatic. Actual exposure must be adjusted manually by centering a pointer visible in the view-finder. Reflex view-finder (image comes through the taking lens); adjustment of focus on the eyepiece is accessible only when film chamber is open. Once the camera is loaded with film, the eyepiece adjustment cannot be altered. Electric-eye system can be set for film speeds of 10, 20, 40, 80, and 160. Electric motor drive is powered by 4 "pen-cell" batteries. Speed of 16, 24 fr.p.s. (and 48 fr.p.s. with an auxiliary 4.5-volt battery pack). Manually-set footage indicator shows number of feet of film not yet exposed. Die-cast body with tan crackle finish.

Lens is "zoomed" manually by a lever on the lens mount. Battery condition can be checked by pushing a button and observing a meter needle in the view-finder. There is a rewind knob and a frame counter for use in double exposures and for overlapped fades of scenes. Due to the fact that the diaphragm is in front of the view-finder prism, the image in the finder darkens to a marked extent as the lens is stopped down.

Performance: Easy to load. Frame speed was found to be correct at 16 fr.p.s. One set of batteries was good for 11 rolls of film. Quality of lens: at normal focal length, fair at *f*/2 and *f*/8; at telephoto setting, good at *f*/2 and *f*/8. The shortest focal length of the lens was equivalent to a normal lens for an 8 mm. camera. There was no true wide-angle setting of the lens. **3**

C. Not Recommended

Kodak Zoom 8 Automatic f/1.9 (Eastman Kodak Co.) $130. Made in U.S.A.

Description: Size, 8 in. long x 5 in. high x 2¾ in. thick. Weight, 2 lb. 7 oz. Lens, *Kodak Zoom* *f*/1.9, fixed focus of about 9 to 24 mm. focal length. Fully automatic electric-eye-controlled diaphragm. Optical finder with engraved frame lines for normal and telephoto fields of view; the entire finder was used for wide-angle setting of the lens. Finder has adjustable focus on eyepiece. Electric-eye system can be set for film speeds of 5, 7, 10, 16, 20, 25, and 40. Spring motor is wound by means of a folding key. Motor does not stop automatically before speed becomes too slow. Single motor speed of 16 fr.p.s. Self-setting footage indicator shows number of feet of film left unexposed. Stamped metal body with gray leatherette coating.

Lens is "zoomed" by sliding the lens mount in and out manually. There are 3 positions marked on the lens barrel, coinciding with the frames in the view-finder (judged an inconvenient method of using a zoom lens). A spot shows dark in the view-finder when there is insufficient light for proper exposure. Lens openings are not shown on the camera. There was no provision for manual setting of the exposure system.

Performance: Easy to load. Motor runs 50 sec. on a full winding. Frame speed was fast at full wind, but essentially correct after 25 sec. Quality of lens: at normal focal length, fair at *f*/1.9, good at *f*/8; at telephoto setting, poor at *f*/1.9, fair at *f*/8; at wide-angle setting, fair at *f*/1.9, good at *f*/8. The footage indicator was located at the front of the camera (undesirable). The fixed-position view-finder was judged unsatisfactory because it did not show the field of view with lens settings other than the 3 marked positions. **1**

Yashica 8E (Yashica Optical Inst. Co., Ltd., 234 Fifth Ave., N.Y.C.) $109.95; pistol grip, $7.95. Made in Japan.

Description: Size, 5½ in. high x 6½ in. long x 2¼ in. thick. Weight, 2 lb. 14 oz.; with pistol grip, 3 lb. 6 oz. *f*/2.8 *Yashinon Zoom* lens of 12.5 to 37.5 mm. focal length, in focusing mount. Exposure meter, which is coupled to diaphragm, is set by manually matching pointers in window on top of camera. Reflex view-finder for through-the-lens viewing and focusing has an adjustable focus eyepiece. Exposure meter can be set for film speeds of 10, 12, 16, 20, 25, 32, and 40. Spring motor is wound by means of a folding key. (Motor stops automatically before speed becomes too slow.) Motor can be set to speeds of 8, 12, 16, 24, 32, and 48 fr.p.s. Manually-set footage indicator shows number of feet of film exposed. Die-cast body, partially covered with plastic.

Lens is "zoomed" manually by means of a lever on lens mount. A small key control is provided for rewinding film for intentional double exposures or overlapping scene fades. Due to the fact that the diaphragm is in front of the view-finder prism, the finder darkens to a marked extent as the lens is stopped down.

Performance: Easy to load. Motor runs 30 sec. on a full wind at 16 fr.p.s. (relatively short). Frame speed, fast at full wind but approximately correct after 15 sec. Quality of lens: at normal focal length (12.5 mm.), fairly good at *f*/2.8; at the telephoto setting (37.5 mm.), fairly good at *f*/2.8 and *f*/8. The shortest focal length of the lens was equivalent to a normal lens for an 8 mm. camera. There was no true wide-angle setting of the lens. The diaphragm setting ring was difficult to grasp due to its small size and its proximity to other controls on the lens. The indicator of the electric-eye system was placed on top of the camera (inconvenient); it would be better placed in the field of view of the view-finder. As the exposure meter was slightly inaccurate, scenes were slightly underexposed. **1**

CLOTHES DRYERS—electric and gas

It is interesting to note, as one travels through different parts of the United States, the absence of clotheslines and of family washing hanging in back yards. This is not to say that clotheslines have disappeared altogether, but they certainly have decreased greatly in number, and it is evident that many homes have clothes dryers, and no longer need to depend on outside clotheslines.

A clothes dryer not only can be operated at any hour of the day, but it permits the homemaker to wash and dry clothes on rainy days and on cold and blustery winter days without need to go outdoors. Furthermore, a load of clothes will dry faster in a dryer than when hung out of doors. In spite of these advantages, clothes dryers have certain limitations. How successfully a dryer does its job depends on the dryer chosen and to a very large extent upon how the dryer is used.

Using a dryer properly

One of the chief complaints heard from women is that dryers cause a great amount of wrinkling and that ironing out these wrinkles is a problem. Fortunately this condition can be avoided, or nearly so, if the dryer is one that operates at a relatively low temperature (not higher than 175°F), *and if the dryer is not overloaded* nor run for too long a period. The proper size load, or number of pieces making up such a load, varies with the type of fabrics and garments, but it can best be determined by observing the motion in the dryer of the pieces being dried. If the articles are able to fluff out and fall freely as they reach the top of the drum, even when the dryer has been running long enough that its contents are nearly dry, wrinkling will be kept to a minimum. However, if the articles do not fall, but revolve in one mass at the same speed as the drum, the load is too large and wrinkling will likely be a problem. When the load contains large pieces, such as sheets, the total weight of the load should be less in order that the sheets, and other pieces in the load, may dry properly and evenly.

Unfortunately, the new dryers are not as simple to operate as older models. On many of the dryers now made, the markings on the controls are too complex, so that the operator finds it difficult to know how to set controls for best drying time and temperature for a given load. Controls that offer only a high and a low temperature setting, and perhaps a medium, are easier to set than those with four, five, or even six marked positions that are seen on some makes of dryers.

Choosing the right dryer

Some dryers require a 3-wire, 230-volt electric service; others are designed to be operated on either 115 volts or 230 volts; still others require gas to supply the heat. Not all manufacturers make all three available.

Each type has some advantages. A dryer operating on 115 volts does not require that the home be equipped with 3-wire electrical service. However, because of the heavy current it takes, it should not be operated with any other appliance on the same branch circuit. Compared with a 230-volt dryer or a gas dryer, the 115-volt dryer is slow, requiring from about 75 to 90 minutes to dry a normal load of clothes.

To operate on 230 volts, a dryer must be connected to a 3-wire 230-volt circuit; such a dryer will dry a normal load of cottons in about 30 to 35 minutes, with a great saving of time. With this type of dryer, it is possible to wash and dry consecutive loads of laundered clothes, for the first load washed can be dried while the second load is being washed, and so on.

Most manufacturers, while arranging the wiring of their electric dryers for operation on either 115 or 230 volts, actually intend them to be installed in the home for operation on 230 volts. This is specially evident on the *Frigidaire*, *G.E.*, *Hamilton*, *Maytag*, and *Philco-Bendix* dryers, as the maximum time for which the timers could be set manually on these dryers fell short of the time required for drying a normal load on the lower voltage.

Gas dryers use electricity at 115 volts to operate the lights, timer, and motor, but the heat is supplied by gas. Generally, gas dryers are the fastest—in most makes, drying times range from about 25 to 30 minutes for normal loads of cottons.

Cost to dry a load

The cost to operate either an electric dryer or a gas dryer will depend on the local charges for the fuel; in most areas, the gas dryer will be the more economical. In general, the cost to dry a full load will be about 2 cents in a gas dryer operated on natural gas (higher on bottled gas), and about 7 cents in an electric dryer operated at 230 volts and about 6 cents in a 115-volt dryer. Over a period of a month, the cost of operating a dryer in most homes, estimating five loads a week, would be about 45 cents for a gas dryer and about $1.40 to $1.50 for an electric dryer.

When considering the matter of operating costs, it should be pointed out that a gas dryer is priced about $30 to $50 higher than the corresponding electric model, and a great many loads will have to be dried to save this extra amount. Assuming that five loads of clothes will be dried each week, on the average it would take 2½ years to save $30 in operating costs and about 4 years to save $50, at usual rates for electricity and gas.

The amount of gas consumed by some pilot lights over a period of a year can be substantial, particularly if the light is of the "standing" type (so-called non-automatic-pilot ignition). The actual cost per day will vary with gas rates, but it can run as high as 2 cents.

Operation of dryers

The way in which a dryer is set to operate and shut off, as well as the method used to get rid of the moisture which is removed from the clothes, warrants careful consideration by the prospective purchaser. The first will have a bearing on the condition of the dried clothes and subsequent ironing, while the arrangements for removal of moisture may involve considerable expense.

Manually-set vs. automatic shut-off: Two types of controls are used on clothes dryers; on one type of dryer, the control is set by the operator to run for just so many minutes and then to stop; on the other type the control is set by the operator for a particular type of fabric rather than for a specific time interval, and an automatic control mechanism is supposed to shut the dryer off when the clothes become dry. Unfortunately, in practice, neither system assures fully satisfactory drying conditions for every load dried.

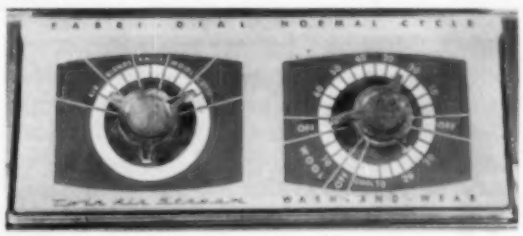
With the manually-set controls, the length of time for drying any load is based upon a guess by the operator. The results vary—from underdried (requiring resetting the controls and running the dryer longer), to various degrees of overdrying. Occasionally a correct guess is made and the clothes come out just right—very slightly moist. Then when the clothes are removed, they become fully dry and are almost wrinkle-free.

With the automatic shut-off controls, there is no problem of underdrying in any machine CR tested (unless the controls are not set properly), but it was found that, more often than not, use of the automatic controls leads to overdrying. When the instructions were followed for operating the dryers with automatic controls, each automatic dryer tested produced clothes that were too dry. Even the lowest setting produced some overdrying. Overdrying carries too far the removal of the moisture content of the fibers. Fabrics which are overdried are not soft and wrinkle-free, but have an unpleasant papery feel.

In some sections of the United States, where mildewing is a problem because of high humidity continuing for long periods, overdrying even to "bone dryness" may be desired. Thus

Some of the controls for "automatic" drying cycles, as those of the Whirlpool above, have an extended range of possible dial settings for each such cycle. Thus the control of drying time is not fully automatic, since the user has to exercise judgment in choosing the setting of the dial. The Whirlpool also has a non-automatic cycle which can be set for a desired number of minutes.

The Hamilton controls below, of a type which provide for a manually-set timed drying period, are simpler to understand and operate.



ELECTRIC CLOTHES DRYERS

Name and Model	Dimensions, inches W	H	D*	Capacity, lb.	Volts	Time to dry load, min.	Control settings	Drying range, °F from	to	Highest temperature reached, °F	Electricity, kwhr. per load	Time or automatic drying
Easy DMK-KE	27	40	27	7	230	25	Normal	110	125	180	2.5	Time
						25	Fine	110	125	180	2.5	Time
					115	80	Normal	80	85	125	2.3	Time
Frigidaire DD-62	27	43½	26½	7	230	35	Regular	120	135	190	2.6	Time
						35	Bulky	120	135	190	2.6	Time
						35	W. & W.	120	135	190	2.6	Time
						47	Delicate W. & W.	90	120	150	2.6	Time
						53	Regular	120	130	185	3.0	Automatic
					115	100	Regular	85	90	90	2.1	See listing
General Electric DA-1020V1	27	44½	25	7	230	25	Manual	110	135	140	2.3	Time
						31	Delicate	110	135	140	2.5	Automatic
						43	Regular	110	135	185	3.1	Automatic
						57	Heavy	110	135	195	3.7	Automatic
					115	90	Delicate	80	90	100	2.4	Automatic (see listing)
Hamilton 4E1	31	43½	27	7	230	35	Cotton	130	140	170	2.7	Time
						34	Wool	130	140	160	2.6	Time
						37	Knits	125	140	150	2.6	Time
						60	Blends	100	120	120	2.6	Time
							Test showed machine not suitable for operation at 115 volts					
Hotpoint LB275	31	43	27½	7	230	33	Normal	125	135	175	2.6	Time
						33	W. & W.	125	135	175	2.6	Time
						55	Low	100	105	160	2.3	Time
						40	Normal	120	130	175	2.7	Automatic
							This machine is not designed for use at 115 volts					
Kelvinator DE700	27	43	29	7	230	30	Normal	100	120	180	2.7	Time
						30	W. & W.	100	120	180	2.5	Time
					115	80	Normal	85	95	145	2.4	Time
Kenmore W26—1187N	29	41	25½	7	230	30	Hot	120	125	170	2.7	Time
						30	W. & W.	115	125	155	2.7	Time
						30	Medium	125	135	150	2.7	Time
						30	Warm	120	130	135	2.7	Time
						50	Delicate	90	120	120	2.6	Time
							This machine is not designed for use at 115 volts					
Maytag DE701	31½	43	27	7	230	30	Manual	125	135	180	2.6	Time
						39	Regular	130	140	180	3.1	Automatic
						44	W. & W.	130	140	180	3.1	Automatic
						22	Damp Dry	125	135	135	1.9	Automatic (clothes suitably damp for ironing)
					115	75	Regular	90	100	105	2.1	See listing

* With door closed.

ELECTRIC CLOTHES DRYERS

Name and Model	Dimensions, inches			Capacity, lb.	Volts	Time to dry load, min.	Control settings	Drying range, °F		Highest temperature reached, °F	Electricity, kwhr. per load	Time or automatic drying
	W	H	D*					from	to			
Maytag DE500	31½	42½	27	7	230	41	Regular	115	130	175	3.1	Automatic
						41	W. & W.	115	130	175	3.1	Automatic
						20	Damp Dry	115	130	130	1.8	Automatic (clothes suitably damp for ironing)
					115	75	Regular	85	90	100	2.3	Automatic
Norge 322-180-0	31	43½	27	8	230	32	W. & W.	110	115	150	3.0	Time
						32	Cot. Lin.	110	115	150	3.0	Time
						42	Woolens	95	100	150	2.6	Time
					115	90	Cot. Lin.	80	85	110	2.5	Time
Philco-Bendix DE-624	27	42½	27	8	230	45	Regular	100	120	175	2.9	Time
						45	W. & W.	90	120	140	2.9	Time
						Test showed machine not suitable for operation at 115 volts						
RCA Whirlpool LJD700	29	43½	25½	7	230	34	Delicate	130	140	140	2.8	Automatic, low setting
						60	Delicate	130	140	140	3.7	Automatic, high setting
						42	Regular	130	140	155	3.3	Automatic
						30	W. & W.	125	135	155	2.9	Time
						This machine is not designed for use at 115 volts						
Speed Queen 111	30	42½	28½	6	230	27	Normal	115	125	200	2.2	Time
						27	Delicate	115	125	175	2.3	Time
						37	Speed-Dry	120	135	135	2.2	Automatic
Westinghouse DAB30SW1	30	44½	30	7	230	27	Regular	175	200	230	2.5	Time
						27	W. & W.	175	200	230	2.5	Time
						80	Low	95	115	150	2.2	Time
						52	Normal	160	230	230	3.5	Automatic
					115	85	Low	95	115	150	2.3	Time

* With door closed

homemakers who have problems associated with high humidity in the home may find the automatic controls quite suitable.

Discharge of moisture: Most dryers are designed to be vented to the outdoors to avoid discharging the moist air into the home. At first, venting may seem unimportant, but disregard of proper means for disposing of the moisture can result in too much moisture being introduced into the home, causing discomfort, and even considerable damage to parts of the house and its contents.

Installing a vent for a dryer may be a bother, and add to the expense of installation, but it will avoid many other problems, such as peeling of paint (interior, and even exterior), loosening of furniture veneers, rusting, and extra discomfort during hot, humid weather.

For installation in a home where venting is not practicable or possible, the consumer can select a dryer that condenses the steam with a flow of cold water which, with the lint, is discharged through the drain. With this type, a cold-water tap and a drain will need to be available, and one must expect to use about 20 gallons of cold water for each load of clothes dried. In homes served by septic tanks or cesspools, this additional discharge of waste water may cause difficulties or increase existing problems.

Capacity

How big a load will a given dryer handle satisfactorily? The load that can be handled will depend on the size or volume of the drum and the type of fabrics and garments to be dried. In general, for loads made up of cottons, which comprise the bulk of most family laundry—sheets, towels, etc.—most dryers will handle up to about 7 pounds (dry weight). The *Speed Queen* dryers will take loads up to 6 lb. and the *Norge* and *Philco-Bendix* dryers up to 8 lb. Of course, one can put larger loads into the dryer, but as the load size increases, the wrinkles will increase in number and in permanency. In the table, the figures under "Capacity" are the maximum loads found by CR to be practical for mixed cottons and linens; these figures provide a means of comparing the capacities of the different makes of dryers.

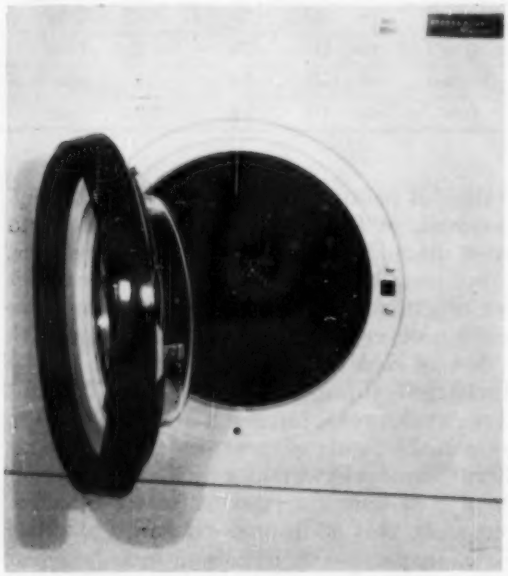
Successful use of a dryer requires that the homemaker exercise a certain amount of judgment in choosing the correct number of pieces, in grouping the fabrics correctly, and, of course, in selecting the right drying time.

Ratings

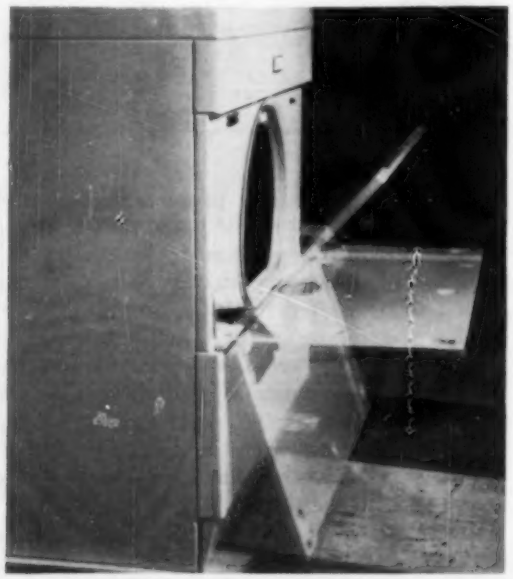
The ratings which follow are based primarily on performance. Since all dryers which could be operated with automatic controls produced overdrying when so operated, none of these machines in CR's judgment warrants an *A* rating unless *also* equipped with manual controls.

In the listings are a number of comments which describe certain characteristics of the dryers which the potential buyer might wish to study before making a selection. The accessibility of the electric light bulb for lighting the inside of the drum, for example, might seem unimportant when one is buying a dryer, but the trouble involved in replacing a bulb that has burned out could be a source of annoyance and expense. On some dryers, the light bulb cannot be replaced unless the backplate of the machine is removed. This means that the dryer must be disconnected electrically, moved away from the wall, and a dozen or so screws removed; while this may be a simple job, it is one for which many will need to call a serviceman. On dryers that have light bulbs so located that they can be reached and replaced readily from the front of the machine, no comment is made in the listings; in cases where the lamps are not readily accessible, the fact is mentioned.

Another point in the design of a dryer, perhaps minor to the manufacturer but extremely



Philco's door interferes with loading and unloading.



Norge's Hamper-Dor is most convenient.

GAS CLOTHES DRYERS

Name and Model	Dimensions, inches W	H	D*	Capacity, lb.	Time to dry load, min.	Control settings	Drying range, °F from	to	Highest temperature reached, °F	Electricity, watt-hours per load	Gas per load, cu. ft.	Time or automatic drying
Easy DMK-KGN	27	40	27	7	25	Normal	120	135	145	165	9	Time
					25	Fine	120	135	145	165	9	Time
Frigidaire DDG-62	27	43½	26½	7	30	Regular	130	145	180	90	10	Time
					50	Delicate W. & W.	100	100	130	140	9	Time
					45	Regular	135	140	180	125	10	Automatic
Hamilton 93M1	31	43	26½	7	33	Cotton	140	150	175	135	10	Time
					33	Wool	135	150	160	135	9	Time
					40	Knits	125	140	145	155	9	Time
					50	Blends	115	125	120	210	10	Time
Kelvinator DG700	27	42	29	7	25	Normal	120	130	165	110	10	Time
					25	W. & W.	120	130	195	110	10	Time
Kenmore W26—1172N	29	41	26	7	21	Hot	160	170	175	115	11	Time
					21	W. & W.	150	165	170	110	11	Time
					21	Medium	135	165	165	115	11	Time
					30	Warm	115	140	145	165	11	Time
					45	Delicate	100	130	130	255	11	Time
Maytag DG701	31½	43	27	7	29	Manual	130	145	180	125	9	Time
					43	Regular	135	150	180	190	11	Automatic
					43	W. & W.	135	150	180	190	11	Automatic
Norge 324-480-0-N	31	44	27	8	27	Cot. Lin.	120	125	155	160	11	Time
					27	W. & W.	120	125	155	160	11	Time
					27	Shag Rugs	120	125	155	160	11	Time
					33	Lingerie	110	115	155	190	10	Time
Philco-Bendix DG-626	27	42½	27	8	27	Regular "Damp Dry"	140	150	150	120	10	Automatic
					29	W. & W. "Damp Dry"	125	140	150	130	11	Automatic
RCA Whirlpool LJD760	29	43½	25½	7	29	Regular	165	175	190	160	12	Automatic
					20	W. & W.	165	180	200	120	11	Time
Speed Queen 139	30	42½	28½	6	30	Normal	100	130	200	140	8	Time
					30	Delicate	95	130	170	125	8	Time
					53	Speed-Dry	95	135	215	230	10	Automatic

* With door closed.

annoying to the homemaker, is reflected in the problem of loading and unloading a dryer. With dryers having their doors hinged at the side, pieces of clothing will at times fall out on the floor. Only three makes of dryers covered in this report, the *Kenmore*, *Norge*, and *Westinghouse*, had doors hinged at the bottom; doors so hinged can be used as platforms, thus making it possible to avoid dropping clothing to the floor during loading and unloading. The door arrangement on the *Norge* was particularly good, in that it could be opened to angles of 45 degrees, 90 degrees, or moved to a dropped position.

All dryers covered in the present study are of the type designed to be vented.

ELECTRIC

A. Recommended

Easy, Model DMK-KE (Easy Laundry Appliance Div., The Murray Corp. of America, Chicago 11) $200. 230 or 115 volts. All controls manual. Lint filter was satisfactory. No light in drum.

Frigidaire, Model DD-62 (Frigidaire Div., General Motors Corp., Dayton 1, Ohio) $190. 230 or 115 volts. Automatic and manual controls. Overdrying occurred when automatic control was used. Lint filter was effective. Air temperature reached in the drum at 230 volts was slightly high except at "Del. W. & W." setting. No light in drum. This dryer is not recommended for operation on 115 volts if manual control dial is to be used, since highest setting of the timer was found to be considerably short of time required to dry a full load of clothes at this voltage.

General Electric, Model DA-1020V1 (General Electric Co., Louisville, Ky.) $280 to $290. 230 or 115 volts. Automatic and manual controls. Lint filter was effective. Overdrying occurred when automatic control was used. Magnetic door latch, and control knob must be pulled out to start dryer, desirable safety features. This dryer is not recommended for operation on 115 volts if manual dial is to be used, since maximum timer setting is considerably short of time required to dry a full load at this voltage.

Hamilton, Model 4E1 (Hamilton Mfg. Co., Two Rivers, Wis.) $220. 230 or 115 volts. All controls manual. Lint filter not fully effective in collecting fine lint. Dryer used 3-in. vent instead of the usual 4-in. This dryer is not recommended for operation on 115 volts, as maximum timer setting was found to be considerably short of time required to dry a full load at this voltage.

Hotpoint, Model LB275 (Hotpoint Co., Div. of General Electric Co., Chicago) $200. 230 volts. Automatic and manual controls. Lint filter not fully effective in collecting fine lint. Overdrying occurred when automatic control was used. This dryer has a separate start button which must be depressed to start dryer, a desirable safety feature.

Kelvinator, Model DE700 (Kelvinator Div., American Motors Corp., Detroit) $190 to $200. 230 or 115 volts. All controls manual. Lint filter was effective.

Kenmore (Sears-Roebuck's Cat. No. W26—1187N) $140, plus shipping. 230 volts. All controls manual. Lint filter not fully effective in collecting fine lint. "Platform door" reduces likelihood of clothes being dropped to floor during loading and unloading. Replacement of light bulb in drum was inconvenient.

Maytag, Model DE701 (The Maytag Co., Newton, Iowa) $300. 230 or 115 volts. Automatic and manual controls. Overdrying occurred when automatic control was used. Lint filter was effective. This dryer is not recommended for operation on 115 volts if manual control dial is to be used, since the highest setting of the timer was found to be considerably short of time required to dry a full load at this voltage.

Norge, Model 322-180-0 (Norge Sales Corp., Merchandise Mart Plaza, Chicago) $190. 230 or 115 volts. All controls manual. Lint filter not fully effective in collecting fine lint. A large door opening with "platform door" provides for convenient loading and unloading. Provisions for keeping drum stationary while heater and blower are running, for drying clothes on stationary rack, and for operating an accessory hair dryer. One of two makes tested which had the largest drying capacity.

RCA Whirlpool, Model LJD700 (Whirlpool Corp., St. Joseph, Mich.) $200. 230 volts. Automatic and manual controls. Overdrying occurred when automatic control was used. Lint filter was not fully effective in collecting fine lint. Replacement of light bulb in drum was inconvenient. Timer dial on sample tested was somewhat hard to set at the desired location on the dial, but this difficulty is said to have been eliminated in subsequent production.

B. Intermediate

Maytag, Model DE500 (The Maytag Co.) $250. 230 or 115 volts. All controls automatic. Overdrying occurred when dryer was operated on 230 volts. Overdrying did not occur on 115 volts. Lint filter was effective. This is a good dryer but open to some objection because of its tendency to overdry on 230 volts and lack of provision for setting controls manually. Would be *A. Recommended* for operation on 115 volts.

Philco-Bendix, Model DE-624 (Philco Corp., Philadelphia) $170. 230 or 115 volts. All controls manual. Lint filter was effective. Replacement of light bulb in drum was inconvenient. In CR's opinion, this dryer may require more than the usual amount of servicing to keep the dryer operating. The service access door on the front of the dryer would not remain closed as it must for proper operation of the door safety switch. This dryer is not recommended for operation on 115 volts as maximum timer setting was found to be considerably short of the time required to dry a full load at this voltage. One of two makes tested which had the largest capacity.

Speed Queen, Model 111 (Speed Queen Div., McGraw-Edison Co., Ripon, Wis.) $265. 230 volts. Automatic and manual controls. Lint filter was effective. Overdrying occurred when automatic control was used. Drum is made of stainless steel (desirable) but is one of the smallest in size of the dryers tested. Air temperature reached in the drum at 230 volts was too high when control was set at "Normal Fabric" setting.

Westinghouse, Model DAB30SW1 (Westinghouse Electric Corp., Mansfield, Ohio) $330. 230 or 120 volts. Automatic and manual controls. Lint filter was effective. "Platform door" reduces likelihood of clothes being dropped to floor during loading and unloading. Replacement of light bulb in drum was inconvenient. Overdrying occurred when automatic control was used. Air temperature reached in the drum at 230 volts was too high except when set at "Low."

GAS

A. Recommended

Frigidaire, Model DDG-62 (Frigidaire Div., General Motors Corp., Dayton 1, Ohio) $230. No light in drum. Automatic and manual controls. Lint filter was effective. Overdrying occurred when automatic control was used. Surface of cabinet became too hot during drying. The standing pilot light used about 5 cu. ft. of gas in 24 hr.

Hamilton, Model 93M1 (Hamilton Mfg. Co., Two Rivers, Wis.) $270. All controls manual. Lint filter was not fully effective in collecting fine lint. The standing pilot light used about 12 cu. ft. of gas in 24 hr.

Kenmore (Sears-Roebuck's Cat. No. W26—1172N) $180, plus shipping. Automatic pilot ignition. All controls manual. Lint filter not fully effective in collecting fine lint. "Platform door" reduces likelihood of clothes being dropped to floor during loading and unloading.

Maytag, Model DG701 (The Maytag Co., Newton, Iowa) $330. Location of pilot light is such that it is difficult to light with a match, without burning the fingers. Automatic and manual controls. Lint filter was effective. Overdrying occurred when automatic controls were used. The standing pilot light used about 7 cu. ft. of gas in 24 hr.

Norge, Model 324-480-0-N (Norge Sales Corp., Merchandise Mart Plaza, Chicago) $240. All controls manual. Lint filter not fully effective in collecting fine lint. Large door opening combined with "platform door" provides for convenient loading and unloading. Dryer has provision for keeping drum stationary while heater and blower are running, for stationary drying on rack, and for operating hair dryer. Also has provision for sprinkling clothes during tumbling; results were good. The standing pilot light used about 5 cu. ft. of gas in 24 hr. One of two makes tested which had the largest capacity.

B. Intermediate

Easy, Model DMK-KGN (Easy Laundry Appliances Div., The Murray Corp. of America, Chicago) $230. All controls manual. Lint filter was effective. The standing pilot light used about 12 cu. ft. of gas in 24 hr. Some shock hazard present; leakage current, 1.1 ma.

Kelvinator, Model DG700 (Kelvinator Div., American Motors Corp., Detroit) $220 to $230. Automatic pilot ignition. All controls manual. Lint filter was effective. Air temperature reached in drum was too high on "Wash and Wear" setting. Some shock hazard present; leakage current, 1.2 ma.

Philco-Bendix, Model DG-626 (Philco Corp., Philadelphia) $230. All controls automatic. Lint filter was effective. Replacement of light bulb in drum was inconvenient. Dryer has "Moisture Measure" control which is claimed to give a range of degree of dryness of clothes from "Damp Dry" to "Fold Dry." However, at the "Damp Dry" setting, clothes were dried to complete dryness. The service access door on the front of the dryer would not remain closed as it must for proper operation of the door safety switch. The starter relay chattered considerably when the start buttons were depressed. The standing pilot light used about 9 cu. ft. of gas in 24 hr. One of two makes tested which had the largest capacity.

RCA Whirlpool, Model LJD760 (Whirlpool Corp., St. Joseph, Mich.) $250. Has automatic pilot ignition. Automatic and manual controls. Lint filter not fully effective in collecting fine lint. Overdrying occurred when automatic control was used. Air temperature reached in drum was too high. Timer dial on sample tested was somewhat hard to set, but this difficulty is said to have been eliminated in subsequent production.

Speed Queen, Model 139 (Speed Queen, Div. of McGraw-Edison Co., Ripon, Wis.) $295. Automatic and manual controls. Lint filter was effective. Overdrying occurred when automatic control was used. Dryer has magnetic door latches, and a "Start" button which must be depressed before dryer will run, desirable safety features. Drum is made of stainless steel (desirable) but is one of the smallest in size of the dryers tested. Air temperature reached in drum was too high except on "Delicate Fabric" setting. The standing pilot light used about 8 cu. ft. of gas in 24 hr.

The mystery of the butylated twins

Consumers' Research tried to find out about the safety of two widely used chemical additives for use in food, but found few sources of information. In this field, there's a startling barrier of governmental secrecy

THE names of two fat preservatives which are used in a very large number and variety of grocery items stand out in every study of food package labels by Consumers' Research. We are safe in saying that a typical homemaker of today buying a week's supply of packaged groceries would be very likely to include some products that contain butylated hydroxytoluene or butylated hydroxyanisole. Indeed, *both* are present in some food products, including certain packaged raisins and breakfast foods.

Of the two butylated fat preservers, BHA (butylated hydroxyanisole) has apparently been more popular among researchers. Two citizens who asked what tests had been made to determine the safety of these ubiquitous chemicals were given identical lists of references by a government agency (see reproduced letter), and only one item, the first, turned out to be about BHT (butylated hydroxytoluene); the long chemical name given in the title of that paper is a synonym for BHT. All the remaining papers listed are about BHA.

In a near-by university library, we had no difficulty obtaining the cited issue of *Agricultural and Food Chemistry* and the two listed issues of *Biochemical Journal.*

Interestingly enough, each of the three scientific papers in these journals gave in *its* list of references the "Summary of Toxicity Studies on Butylated Hydroxyanisole," third item in the F. & D. Administration's list. Nonetheless the library could not supply that publication. We wrote to the American Meat Institute Foundation, listed in the reference as its publisher. Back promptly came the reply: ". . . sorry . . . but no copies of [this] AMIF publication are available for distribution."

A "publication" that was not published

Puzzled that a large library and now apparently even the publisher could not supply this item, we asked for more information: Just what was the "Summary," a book, pamphlet—possibly part of some larger publication?

The "Summary," cited as a reference source in at least three learned papers, actually, according to the Meat Institute Foundation, "was not published"! "It was," they said, "information submitted to the Bureau of Meat Inspection of the U. S. Department of Agriculture at the time butylated hydroxyanisole as an antioxidant for food fats was under consideration by the U. S. Department of Agriculture."

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
FOOD AND DRUG ADMINISTRATION
WASHINGTON 25, D. C.

This replies to your request of January 31 for information about toxicity tests made on butylated hydroxyanisole and butylated hydroxytoluene.

Our Division of Pharmacology has supplied the following list of references:

Toxicity of ditertiarybutylmethylphenol; Deichmann, William B., Arch. Ind. Health 11:93 (1955)

Effect of Feeding Butylated Hydroxyanisole to Dogs; Wilder et al, Agricultural & Food Chemistry, Vol. 8, No. 6, Nov.-Dec. 1960

Summary of Toxicity Studies on Butylated Hydroxyanisole; Wilder et al, American Meat Institute Foundation, Dec. 1948

The Biochemical Journal; Vol. 75, #3, June 1960 (p. 543); Vol. 64, #4, December 1956 (p. 777).

We hope this information will be helpful.

Sincerely yours,

Dorothy H. Koegler

Dorothy H. Koegler
Division of Public Information

Told of the difficulties in obtaining the "Summary," the Food and Drug Administration was of little help. Said the agency, "we are sorry that this paper is not available and apparently should not be listed among our references on this subject. . . . We are not in a position to make our copy of the paper available."

With this polite but decisive bureaucratic brushoff ringing in his ears, the patient but persevering inquirer wrote to the Meat Inspection Division of the Department of Agriculture. Their reply was astonishing and disquieting.

Said the Meat Inspection Division, "Both the antioxidants which you mention [BHA and BHT] have been exhaustively studied by comprehensive animal feeding studies. . . . the toxicity studies were not conducted by a government agency but by private companies . . . under the direction of this Division . . . . The data resulting from the feeding experiments is in our files but *is not available for distribution since it was furnished to us in confidence. We do not know whether the results of these studies have been published. . . . We do not have a copy of the paper to which you refer, entitled, Summary of Toxicity Studies on Butylated Hydroxyanisole.*" (Italics ours.)

So, this was the end of the long and time-wasting search for the much cited "Summary." The agency to which it was supposedly submitted did not have a copy—and what information they did have about the toxicity of BHA was "confidential." Another tax-supported agency which did have a copy was "not in a position" to make its copy available, meaning that the agency did not concede that consumers have any right to read and judge the validity of information which the government thinks good enough to provide a basis for adding a more or less poisonous substance to hundreds of items in our food supply.

It is very disturbing to know (1) that the government's basic data from which was decided the "safety" of BHA and BHT were supplied from private sources which have an evident commercial interest in the products, (2) that these scientific data and the reasoning whereby they were interpreted are not available for critical examination by any person outside the government service, and (3) that the Meat Inspection Division which originally approved use of these chemicals in food is so backward in its studies of relevant scientific literature that they "do not know" what has been published on the subject.

The chances are good for the general correctness and truthfulness of *published* scientific studies, or for their fairly prompt correction if wrong in some major respect, because papers published in scholarly journals are often read critically by experts in the fields concerned, and normally by some experts who have no financial stake in the matters discussed. This safeguard, of course, can not apply to studies which emanate from commercial sources and are kept as secret information in the files of a government bureau, available only to government officials and administrators, or perhaps to certain representatives of industry.

References listed as sources at the end of a published scientific paper are assumed, unless stated otherwise, *to be available to interested persons.* Listing of the secret "Summary" by authors of the papers on BHA was a violation of a sound and widely accepted rule. It is hard to account for, except on the assumption that there is something that needs to be kept from public review. One wonders whether the secret paper was at any time made available to the various authors of papers which cited it (and if so, by whom), or whether they relied on abstracts, merely, or other second-hand reports about its contents.

As the number of chemical additives tolerated in foods keeps rising (well over 3000 now), it becomes increasingly urgent that all experimental work claimed to show their safety be exposed to public scrutiny and review *by any interested independent expert. Governmental authorities should give no weight at all to data on toxicity which are supplied "in confidence,"* or to information which is restricted in any way so that it cannot be made freely available to anyone interested. This does not mean that secrets of manufacturing methods need be publicly disclosed—but no chemical product should even be considered for addition to food unless its exact chemical formulation is known and the results of tests alleged to show its safety are made generally available at any and all times to all who may be interested.

How safe are BHA and BHT?

The papers we *were* able to find revealed some interesting facts and judgments about BHA. The earliest of the references was to a study, published in 1956 by three scientists in New Zealand. "Although studies of the conventional type on acute and chronic toxicity have been made," the authors said, "no studies on metabolism [how the material is utilized or is changed in the body] have been made." Concluding their own study of BHA's metabolism in rabbits, the authors point out certain reassuring facts about metabolism of BHA, but say also that some of their findings are less satisfactory, notably the observation that "four or five daily doses of one gram to a rabbit have cumulative and lethal effects. This shows the need for further studies . . . at lower dose levels . . . ."

And note that these views about the need of further investigations were published some eight years *after* use of BHA as a preservative in edible fats had been approved.

A report published in 1960 on the metabolism of BHA in rats, according to its authors, "approaches closer to human-usage doses than any previous study of antioxidants." (We wonder how the author can be sure; perhaps on this point, too, the story of some relevant previous work is locked somewhere as a "classified document" in a bureaucrat's files.) The paper concludes, "No evidence has so far been presented which suggests that BHA is not largely absorbed and largely excreted at these very low doses." In other words, no one is *known* to have shown it's bad for you; presumably then it's OK—but this presumption is based on the belief that whatever investigators have found out has been *published* for other scientists to read.

The one paper in F. & D. Administration's list which reports about the other butylated preservative, BHT, was published in 1955 and describes tests in which the drug was fed in various dosages to rats, rabbits, guinea pigs, and dogs. The amounts of single doses sufficient to kill the animals were determined, as were the amounts that could be tolerated in repeated feedings for periods as long as two years. In these latter tests, some deaths of animals were noted, but the fatalities seemed to bear no relation to the amount of BHT ingested. Even some control animals that ate no BHT, died. *Because of this conflict of evidence* it was "believed" that BHT had not caused the deaths, and that it "could be used without any public health hazard."

It was on this basis, apparently, that the federal regulatory agencies allowed the use of BHT in foods. Incidentally, the scientists who made the report last cited were financed in their studies by three chemical manufacturers; all were commercially interested in the sale of BHT.

Perhaps, by the time BHT has been in common use for another five years or so, the Food and Drug Administration will be able to refer inquirers to reports of necessary studies of BHT's metabolism that demonstrate its probable safety—or its danger to health on a long-term basis.

There seems persuasive, though not conclusive, evidence that BHA is comparatively harmless in very low concentrations. We wonder, however, about the cumulative effects of ingesting a little here and a little there —in each of perhaps a dozen foods a day if one's diet happens to consist mainly or largely of factory processed foods (a common situation for many consumers).

As to BHT, what evidence we found tends to be favorable, but we would like to see comprehensive studies by other investigators, and the evidence on which government agencies decided the compound was safe as an additive.

We are convinced of the need for continuing scrutiny both by the general public and by scientific experts of the evidence that is offered to "prove" the safety of any and all chemicals in food. There should be no cases whatever of blind acceptance of decisions by government pundits based on secret reports by commercially interested proponents of various materials. Every scientist who experiments on the effects of any chemical food additive on animals or humans should feel morally obligated to publish his data and findings, and expose them to the fire of criticism by his peers in research. Certainly, when such material is submitted to a government agency in support of an application for official action, the experimental findings and the data underlying them—every word of those records and observations—should become part of the public record, freely available to any inquiring citizen.

Brief index of January through September 1961 issues of CONSUMER BULLETIN

	Month	Page
Air conditioners, automobile*	June	11
room*	May	29
Air conditioning, objections to	June	3
Airplane kits, model	July	25
Appliances, care, repair, and upkeep*	Apr	29
cooking, controls on*	Aug	28
Automobiles, 1961, compacts		
annual report*	May	6
Buick Special, Dodge Lancer, Rambler American*	Jan	10
Corvair, Ford Falcon, Oldsmobile F-85, Valiant*	Feb	14
Comet, Pontiac Tempest, Rambler Classic 6, Studebaker Lark 6*	Apr	6
Automobiles, 1961, full-size		
annual report*	June	15
Chevrolet 6 and V-8, Dodge Dart, Ford 6 and V-8, Pontiac*	Mar	11
Plymouth V-8, Rambler Ambassador V-8*	June	18
Oldsmobile Dynamic 88, Buick LeSabre*	June	22
Chrysler Newport, Mercury Meteor 800 V-8*	July	11
Automobiles, foreign, buying abroad*	July	32
Volkswagen, new*	Aug	11
station wagon*	Aug	24
Automobiles, station wagons, 1961*	July	14
sports or camper wagons, new*	Aug	22
Automobiles, air conditioners*	June	11
gasoline consumption, economy in*	Sept	22
headroom in cars	Sept	27
motor club, new	Sept	4
safer designs needed	Aug	13
small, advantage from an investment standpoint	Mar	22
spark plugs, selecting right type*	Jan	2
tire repair device*	Sept	39
Binocular, zoom*	June	39
Bottle warmers, baby, automobile*	May	39
Building codes, some outdated	Sept	4
Cameras, choosing a 35 mm. camera*	Aug	16
lenses, interchangeable—telephoto and wide-angle*	Aug	18
movie camera, 8 mm. sound*	Sept	2
pitfalls in taking pictures*	Mar	23
35 mm. automatic, semiautomatic*	June	27
"half-frame" camera*	June	29
range-finder type*	Aug	17
single-lens reflex*	Aug	17
Camping activities, book review*	Aug	39
Carbon tetrachloride, danger	Aug	3
Cements, epoxy-resin*	Feb	28
Charcoal ignition devices	July	33
Chemicals in food, review of book*	Sept	10
Clothing, coats and jackets with foam linings, care	Jan 4, Sept	38
dresses, silk print, complaints	Sept	4
shirts, men's white wash-and-wear*	Sept	6
"sure care" symbols on labels	Aug	25
Coffee maker, electric*	Aug	2
Consumer Bulletin, binders for	Sept	12
commercial use of reports not permitted	July	28
special rates for schools	Aug	27
use of mailing lists	Sept	3
Consumers, buying at a discount house	Sept	3
checking up on a company	Aug	19
do they buy things not needed?*	Mar	32
legislative protection, trends*	June	31
shopping on vacation in big cities or abroad	July 32*, Aug 3, Sept	37
why some don't spend their money*	Aug	32
Contact lenses, bifocal*	Jan	14
Dehumidifiers*	July	29
Detergents, household, toxicity	Aug 38, Sept	37
Diet, overemphasis on undesirable foods and chemical additives*	Aug	26
Diets, booklet on weight control	Apr	37
liquid formula	May 37, July 3, Aug	4
Dinnerware, plastic*	June	6
Dry-cleaning machines, coin-operated	Aug 14*, Sept	23
Electric home heating*	Jan	24
Encyclopedias, sales practices*	Aug	20
Eye and eyebrow make-up	Sept	38
Faucet spray device	Sept	38
Film, color, negative*	Jan	39
Flashlights, rechargeable*	Feb	39
Floor polishing machines*	July	6
Food and Drug Admin., open letter to*	May	27
Food freezers, upright*	July	17
Food labeling*	June	2
Food waste disposers*	Mar	6
Foods, chemical additives*	Apr	24, May 27, June 2, Aug 26, Sept 10
effects of soils on quality*	Jan	20
ready-to-serve, costly	Sept	3
sugar, enemy of nutrition*	Feb 10, Mar 39, Aug	26
Freezers, food, upright*	July	17
Frying pans with non-stick coating*	July	26
Furniture, poor quality	Aug	3
Garbage disposal units*	Mar	6
Gardeners, home, hand sprayers for*	May	2
timely advice to*	May	32
Gasoline consumption, economy in*	Sept	22
Guarantees	May	33
Gum, chewing	Aug	31
Hair dryers*	Jan	16
Hair tonic, history of claims*	Sept	32
Hearing aid dealers	Aug	31
Heaters, water*	Sept	14
Heating the home with electricity*	Jan	24
Hook, magnetic	Aug	38
Insect control outdoors	July	25
Insect repellents	June	4
Insecticide vaporizers, Lindane	May	31
Installment payment plans, costly	Sept	37
Insurance for photographic equipment	May	30
Kitchen vents and hoods	Aug	31
Labeling, food*	June	2
Lawn mowers, power, safety specifications adopted*	June	10
Lawns, crabgrass, control of	Apr	37
weed killing, simple device for*	July	39
Lemon juice, as an aid to health	July	4
Lenses, contact, bifocal*	Jan	14
Lightning rods	May	31
Lights, electric, night*	Feb	2
Loud-speaker, bookshelf-style*	Sept	13
Luminescent devices, reflecting materials*	Feb	2
Medicine bottles, safety caps for	July	4
Medicine cabinets, "child-proof"	Aug	4
Medicines, first-aid manual	June	38
Mobile homes*	Feb	6
Motion pictures, ratings*	each issue	
violence emphasized	Jan 33*, July	4
Movie camera and projector, 8 mm. sound*	Sept	2
Orange juice and orange products	Mar 3, June 38, Aug	3
Ovens, electric, built-in*	Apr	18
Paints for exterior use, latex—Part I*	Sept	24
Percolator, electric*	Aug	2
Photography, pitfalls*	Mar	23
Polishes, silver, tarnish preventive*	Jan	6
Polishing machines, floor*	July	6
Pools, swimming, problems	Apr	3
Porcelain enamel, chipped, repairing*	Feb	23
Pork, lack of trichinosis inspection	Sept	4
Projector, 8 mm. sound movie*	Sept	2
Projectors, opaque*	Mar	16
slide*	Sept	20
Range hoods, ventilating	Aug	31
Ranges, electric—built-in ovens and counter-top units*	Apr	18
controls*	Aug	28
Record changers, automatic*	Feb	22
Records, phonograph, ratings*	each issue	
textbooks for blind students	Aug	4
Refrigerators, gas, not popular	Aug	4
Rugs and carpets, performance ratings	Aug	37
shrinkage of	July	38
Sewing machines, straight-stitch*	Mar	18
zigzag*	Apr	2
Shaver, electric, men's*	July	2
Shirts, men's white wash-and-wear*	Sept	6
Shoes, children's*	May	12
spike heels damage floors	July 3, Sept	3
Silver polishes, tarnish preventive*	Jan	6
Skillets with non-stick coating*	July	26
Slide projectors*	Sept	20
Snow and ice removal, chemicals for*	Feb	30
Soils, effects on food quality*	Jan	20
Sprayers, hand, for the home gardener*	May	2
simple device for spot weeding*	July	39
Stainless-steel flatware*	Feb	18
Station wagons, 1961*	July	14
sports or camper wagons, new*	Aug	22
Stereo components, hi-fi	Sept	27
Stockings, tight, effects	Aug	37
Sugar, enemy of nutrition*	Feb 10, Mar 39, Aug	26
Sunburn, danger	June	4
Sunglasses with extra-wide frames	June	4
Suntan preparations, problems	Apr	38
Tennis balls*	July	23
Timer, pocket	Aug	38
Tire repair device*	Sept	39
Toaster, electric, new*	Apr	39
Tobacco, new spray, effects	Jan 3, Aug	37
Tools, shaping, new*	Apr	16
Toothbrushes, new kinds	Aug	38
Towels, "unwoven," advertising of*	Aug	29
Trailers, mobile homes*	Feb	6
taxed as real estate in N. Y.	Aug	4
"TV elbows," a new ailment	Aug	37
TV sets, safe use in schoolrooms*	Mar	26
Vitamins, buying	Sept	27
Washing machines, automatic*	May	16
washer-dryer combinations*	Aug	6
Watches, selection and repair*	Sept	28
Water heaters*	Sept	14
Wax, removing from linoleum	Sept	27
X-ray machines, many defective	Sept	3

*Entries marked (*) are longer or more comprehensive items.

NOTE: Back issues of CONSUMER BULLETIN (1960-1961) are available at 40 cents each; 1959 and earlier issues, 50 cents each. Thirty popular reprints are listed on p. 24 of June 1961 issue.

Close your door to furnace repairmen?

The use of scare tactics and gross misrepresentations, dishonest and fraudulent inspection and repair of hot-air furnaces, as well as the charging of exorbitant prices, have been characteristic of the Holland Furnace Company. But it will be best to assume that these high-pressure methods are not limited to any single furnace company

A NEW ENGLAND woman wrote to Consumers' Research that she had made a deal with the Holland Furnace Company to buy a whole new heating system for $2000. Though normally a careful buyer, she had just come home from the hospital after a serious operation and was then subjected to the arguments of a high-pressure "heating engineer" and salesman who filled her with fear that the furnace which she then had would blow her and her family to kingdom come.

She had heard of the furnace company's name and assumed it was above reproach and reliable. "It was the day that the house was torn up to ribbons and a great part of the work started, that I thought I'd see what Consumers' Research had to say. If only I had looked first! The first thing I happened to turn to was in your February 1957 issue, under your Observation Post on page 4 about the fraud the Holland Furnace Company perpetrated in Philadelphia. I was sick! Then I read in your Annual Bulletin 1956-57 on page 160 about service 'gyps' and I was even sicker." Her letter continues, "aside from downright lying and misrepresentation, we have had constant trouble [with the new $2000 installation]. But what has driven us mad is an oily film—black as coal—on every single thing in the house—all twelve rooms . . .we actually could not afford the new heating system and will be paying for it for about five years. . .an expensive and heart-breaking lesson. . .with a steady stream of so-called servicemen and engineers here to fix and remedy the situation—to no avail."

Every owner of a warm-air furnace should keep in mind the experience reported by our correspondent, and the following headlines from CR's files on warm-air heating systems which are typical of newspaper articles and Better Business Bureau releases over the past three years; they tell a story that should warn homeowners to be on guard against new operators of the same sort of racket.

"Holland Furnace Ordered to Stop 'Scare' Selling Tactics"

"Holland Furnace Salesmen Sentenced." Philadelphia judge fined ten Holland Furnace salesmen; arrest made after more than fifty complaints from householders.

"Holland Furnace Promises Cooperation"

"Citizens Protest Tactics of Furnace Repair Firm"

"Holland Furnace Company ordered by FTC to Cease Deceptive Practices"

"Holland men charged with Deceit"

"Bilked by a 'Furnace Man' "

"So. Dakota Court Denies Holland Furnace Motion"

"Minnesota Suit Hits Holland Furnace"

"Holland Sells Same Owner Two New Furnaces, total price $3200, within three years"

The Holland Furnace Company has a long history of encounters with various judicial agencies at the city, state, and national level; and the firm's salesmen have employed just about every trick in the book, without letup, to sell their product. Unfortunately a great many persons have been easily frightened by aggressive and unscrupulous salesmen and repairmen into signing a contract for expensive furnace repairs or replacement.

The particular means that may be used to gain entrance to one's home vary from time to time. A householder may mail a postage-free return post card on which he has indicated an interest in having his furnace inspected, or a salesman may knock at the door, or a man representing himself as a fire inspector or employee or representative of a city-government agency or a utility company or a "heating engineer" may request permission to inspect the home heating plant.

The typical procedure of the furnace repair racketeer is to gain access to the heating plant by some misrepresentation, then *take it apart* and leave the pieces scattered about the cellar; he then refuses to assemble the parts again into working condition, on the fictitious ground that the furnace is in immediate danger of causing a fire or explosion, or giving off deadly gas fumes. Perhaps the statement will be made that the furnace is beyond repair, or its manufacturer out of business, and repair parts unobtainable. Since one of the high-pressure furnace-selling companies has about 5000 employees operating in nearly all states, and has 500 service stores or offices, the scale of the fraudulent operation is a big one; the unscrupulous salesmen must have "taken" many thousands of honest citizens for a great many millions of hard-earned dollars.

If you are approached by a man presenting any sort of questionable repair or reconditioning scheme, and representing himself as any kind of official or engineering expert, *ask for his credentials*, and if they are not presented without evasion or delay, shut the door in the man's face; this will often save time, money, and much trouble, even financial disaster. In any event, call the local Chamber of Commerce or Better Business Bureau and check on the offer or the "inspector." Further, *don't sign anything*, even if the man promises to do a certain job for a small or moderate sum.

Don't be fooled by the offer of "free" inspection or servicing. The "free" service may turn out to be on the order of $1500 to $2000 worth before the matter is closed, and to many a family this could be a catastrophic situation. Besides, the new furnace is likely to be less satisfactory than the one the "inspector" wrecked as part of his sales pitch. The companies that do this sort of work seem often to select old people living alone for their victims; elderly folk are perhaps more easily than others frightened by warnings of dire results if the furnace is not repaired and a contract signed at once.

In cities where public authorities are on the job, while this type of racketeering may start, it won't last very long, for some city legal officials to whom such shady selling was reported have gotten going promptly and effectively. State or city officials can get quick and decisive action through the newspapers, by court action, by revoking the crooked furnace company's license to do business within the state or city. If your state or city does *not* have legislation that permits this type of action, it would be well to check with your alderman or legislators to see that legal provision is made which would remove the possibility of this type of racketeering in your locality.

If you suspect your furnace is not functioning properly or that it is in need of service, call a local heating man whose reputation for fair, honest, and reliable dealing is known to you. If you need a new furnace, get competitive bids from at least three different contractors. Above all, don't be rushed or frightened into having a cleaning or repair job done immediately because a salesman talks of imminent danger of asphyxiation, carbon monoxide poisoning, fires, flarebacks, explosions, and the like, as likely to occur with your heating plant. In rare instances he could be telling the truth, but there is a good chance that he is just a "fast-buck operator" who may know less about your furnace than you do yourself.

Corrections to Consumer Bulletin

Water heaters
Page 18, Sept. '61 Bulletin

As the figures in the fourth column of the table indicate, the column head should be "Cost to heat 100 gal., dollars" (not cents).

Built-in electric cooking appliances, in table on
Page 22, Apr. '61 Bulletin

Change the preheat time for the *Tappan* oven to 7.1 minutes. Change the preheat time for the *Westinghouse* oven to 12.1 minutes.

Contamination of the home water supply

Doesn't happen often, but when it does, the result may be disastrous

LETTING a hose end lie beneath the surface of a pond being filled is a simple example of what plumbers and public health authorities call a "cross-connection." In general, a cross-connection is any physical link between a piping system that carries drinking water and any source of possible contamination.

In improperly installed plumbing systems, there may actually be pipes running between waste lines or lines carrying non-potable water, and the drinking water supply, with valves that are supposed to be kept closed except when opened for some special purpose. Any such situation is an open invitation to disaster, for a valve may be left open by mistake, or it may develop a leak, as all valves do in time because of corrosion or incrustation. Within fairly recent memory, a cross-connection of this sort in the piping of a large and famous big-city hotel led to an outbreak of amoebic dysentery in which 98 persons died and some 1500 were made seriously ill.

Home, factory, and office building piping is often laid out so that there is a connection somewhere, through a valve of some sort, between fresh water piping and a drainage or outflow system or a swimming pool or garden pool, a stock-watering tank, the heating plant, or a snow melting system. Every such connection carries the possibility of contamination of drinking water in case of interruption of pressure on the drinking water lines.

Photo courtesy Sloan Valve Co.

Figure 1—The "flushometer valve" used for many toilets in public buildings is a potential site of dangerous backflow to drinking water lines, unless a protective vacuum breaker is present. One type of vacuum breaker is shown in the picture, at the top of the vertical pipe section just below the valve handle. (Flushometer valves are not generally used in private homes because the rapid flow of the large volume of water needed to operate a fixture equipped with such a valve is not available with the small piping used generally in homes.)

More recently, in Shreveport, Louisiana, an epidemic of enteritis was traced to an improperly installed lawn sprinkler system. Incorrect connections between two sections of the sprinkler system permitted water from a bayou to be pumped into the city supply. Then breakage of a sewer line led to gross contamination of the bayou water, and the epidemic followed.

Special care in the design and installation of plumbing systems is, of course, needed in establishments such as hospitals, biological laboratories, and mortuaries, where sources of serious infection are continuously present, and in large homes and other buildings where the extent and complexity of the piping make it easy to overlook a potentially hazardous connection.

In several Federal buildings in the Washington, D.C., area, chemicals for control of boiler corrosion flowed into the water supply systems through faulty cross-connections. There have been cases of mortuary fluids entering public water supplies, and an epidemic of undulant fever was caused by the drawing

into the water supply of organisms being used for research.

The occasion when the careless homeowner is most likely to find himself establishing a "cross-connection" is in the filling of a small plastic wading or swimming pool. A natural procedure is just to put the end of a garden hose into the pool, attach the other end to a spigot, and turn on the water. If you do this, you will run the risk of contamination when the incoming water rises over the end of the hose. The possibility arises that a reduction in the water-supply pressure may establish a partial vacuum in the piping or some part of it and cause water to run back through the hose *from* the swimming pool *into* your pipes at a time when the hose end is covered by the water in the pool.

A similar possibility of "back-flow" or "back-siphonage" exists whenever the end of a supply line gets below the surface of the water in any vessel being filled. Other examples: (a) a spray hose below the surface of dishwater in a sink, (b) shampoo or shower hose submerged in the water of a washbowl or bath, or a faucet whose outlet goes below the level of the brim of the washbowl, (c) hose for filling, its end submerged in the water in a sink, tub, or clothes washer, (d) inlet pipe to a pond set below the surface of the water, (e) end of a garden hose allowed to lie in a puddle.

One way to prevent trouble in any of these situations is simply to keep the supply hose or pipe above the highest level the water can ever reach.

A hose end lying in a low spot or puddle on the lawn or an underground sprinkler system may pose a special hazard in addition to that of possible infection from disease germs or viruses. If one of the many preparations containing highly poisonous compounds of mercury or arsenic, or a cyanate for killing weeds or crab grass has been applied to the lawn, any backflow into the drinking water system may lead to severe, even fatal, poisoning of someone who drinks the water. The same problem can arise with perforated sprinkling hose or porous hose for watering a lawn or garden by seepage.

When there is no way to keep the supply line above the water level at all times, as with an underground sprinkler system or perforated or porous hose, the best protection against backflow is a vacuum breaker in the supply line. (Such a device might fail in exceptional circumstances, but it is nevertheless a vital and necessary safeguard.) Vacuum breakers, sometimes called siphon breakers, are available from some of the larger plumbing supply houses and hardware stores. The devices operate by admitting air into the line if the supply pressure goes down. Thus air, instead of polluted water, is sucked back into the drinking water lines. A similar protective effect is achieved in some situations by a simple air gap in a downflowing pipe line.

Figure 2—To prevent any possibility of backflow, the end of the outlet which provides water for a bathtub, lavatory, or sink should be an inch or two at least above the highest level to which the water can rise. In this case, the clearance was so small that for safety the original outlet was plugged, and a suitably bent tube was installed with its outlet well above the level of the rim of the sink.

A related kind of trouble, but slightly different from the connection of a drinking-water pipe to a waste pipe or other source of contamination, may occur from the improper "cross-connection" of two or more waste lines. If the outlet from a dishwashing machine, for example, is directly connected to the pipe which serves to carry away waste from a garbage disposer, some of the material from the garbage disposer may get into the dishwasher by back-siphonage through the dishwasher drain line. The way to prevent this is use of a properly placed air gap in the waste line of the dishwasher.

(*Concluded on page 33*)

Latex paints for exterior use—Part II*

Priming coats

Some makers of latex paint supply an oil primer, specially made for use with the latex finish paint, that is very fast in drying. Such very-fast-drying oil primers are nearly always relatively low in non-volatile content, and they may leave coatings about as thin as those of latex paints. It is commonly stated, however, that the house-paint primers that have long been sold for use with the oil-type finish paints likewise are suitable for use under the latex paints. Such primers are slow drying (should not be recoated until at least the next day), but they are much higher in non-volatile content and will supply the desirable greater dry-film thickness.

The makers of latex paints are still trying to develop satisfactory latex priming paints to go with their finish paints, for painting wood. Some makers now sell such water-thinned primers. For use in repainting they present difficulty in securing adhesion to old chalky oil paint, mentioned in our first article. In painting new wood the new primers also have disadvantages. First, the wood necessarily takes up some water from such a water-thinned priming paint; this water absorption tends to raise the grain (roughen the surface) of smooth wood, may cause cupping or warping of the wood, and may even lead to checking or splitting of the wood when the absorbed moisture dries out again.

On wood of certain species and of good quality, in sizable thicknesses and firmly fastened in place, none of these developments may occur to an objectionable extent. On the other hand, there have been cases in which application of latex paint directly to bare wood has produced serious defects of the kinds mentioned. Water in a priming coat of house paint presents one other difficulty that is likely to be experienced more often. Two of the best and most widely used woods for siding on houses are western red cedar and redwood. Both contain strongly colored substances that are readily soluble in water; in fact the characteristic color of the heartwood of those woods is due to the water-soluble substances. Application of a latex paint to red cedar or redwood may in a short time bring the colored substances through the paint to discolor it, and it may continue to discolor subsequent coats of latex paints. Even after a thin application of a fast-drying oil primer, a condition sometimes encountered, application of a latex paint may result in discoloration due to the water-soluble coloring matter in red cedar or redwood.

Discoloration should not occur after application of a proper coating of oil-type primer of good quality. *Conclusion:* Present indications are that it is essential to use a good quality oil-type primer properly applied before the application of exterior latex paint. Such a primer should also prevent discoloration from red cedar or redwood.

Advantages and disadvantages

Most of the latex paints on the market up to now tend to stay relatively clean and bright in appearance and, if tinted, to hold their tints relatively well. Where paint coatings are likely to become discolored by growth of mildew, particularly in warm, humid climates, the latex paints require effective chemical additions known as mildewcides to keep them free from mold growth. As far as CR knows, all of the latex paints on the market do contain mildewcide, but under conditions that strongly favor mildew growth the latex paints probably are no more resistant, and may not be quite so resistant, as the oil paints that contain zinc oxide in sufficient amount, with or without an additional mildewcide.

The latex paints usually make coatings that are considerably more readily permeable to moisture than coatings of oil paints. Since the latex coatings commonly are also thinner than comparable oil-paint coatings, the difference in ability to retard the movement of moisture into or out of surfaces of painted wood can be very great. Thus coatings of latex paint applied directly to wood without use of an oil-type primer may fail to supply enough protection against some of the effects of wood weathering, such as checking and

* The first part of this article appeared in the September 1961 Consumer Bulletin. It discussed the differences between latex and oil paints, the durability of latex paints, the problems that arise in repainting over existing oil paint, and the number of coats and amount of work required.

"cupping" of the wood. Use of an oil-type primer of good quality under a latex paint goes far to overcome such shortcomings and seems to be adequate for those woods of a kind and grade that naturally weather relatively well, such as red cedar and redwood. For woods that do not resist weathering so well, such as flat-grain boards of pine, the poorer protection of the latex paint system may result in somewhat more checking and distortion of the wood in service.

The latex paints on the market are claimed to be highly resistant to moisture blistering and moisture failure. This claim seems to be justified. The reason usually advanced is that the high permeability of the latex paints to moisture vapor keeps the wood in contact with the coating from becoming wet, even if much moisture is passing through the painted wood. The theory suffers from the fact that the latex paints remain resistant even when a suitable oil primer is interposed between wood and latex coating, sufficient to make the permeability of the coating about the same as that of some oil paints that are quite sensitive to moisture blistering.

The swelling behavior of the latex paints in water, however, differs strikingly from that of the oil paints. Oil paints absorb water and swell slowly, so that some hours elapse before the extent of swelling becomes very great. The latex paints, on the contrary, absorb water and swell very quickly, reaching their maximum swelling in some cases within a single hour. There are, however, many different latex vehicles and some can be found that swell even more than any of the oil paints and take many hours to reach their maximum swelling.

The evidence thus far seems to indicate that even though the latex paints make relatively thin coatings, they may, under favorable circumstances, prove as durable as coatings of good oil paint of twice the thickness. If such proves to be the case, it presumably comes from the fact that the latex paints remain free from brittleness for a longer time, and lose coating thickness more slowly by erosion during exposure to the weather. Nothing seems to be known as yet about the coating thickness at which the latex paints will give their best and longest service and nothing is known about the possibility that, like the oil paints, there is a maximum thickness beyond which they will no longer give their normal good performance. *Conclusions:* 1. A good oil-type primer should go far in preventing adverse effects caused by the higher permeability to moisture of latex paints than oil-based paints. 2. Under favorable circumstances latex paints can prove as desirable as good oil paints of twice the thickness. 3. Latex paints are not likely to be quite as resistant as oil paints to mildew.

Tinting latex paints

If it is desired to tint a latex paint by adding small amounts of tinting color, care must be exercised to use only tinting colors that will mix properly with latex paints. The old-fashioned colors-ground-in-oil may not disperse evenly in paints having water as the vehicle. Suitable tinting colors for latex paints are available.

Label formulas

Many of the latex paints now on the market, perhaps most of them, bear a statement of the composition or formula on the label. Such label formulas do not tell the purchaser as much as do the formulas on properly labeled oil paints. Among the oil paints, the things that chiefly determine the practical behavior of the paint are the kind and amount of the different pigments and the proportions of total pigment in the paint and of the non-volatile vehicle (oil) in the vehicle. All of the necessary data appear in proper label formulas. Even when the vehicle is an alkyd-resin instead of linseed oil the formula is still nearly as useful. On the other hand, the formula as given on the latex paints really tells very little. The thing that chiefly determines the performance of a latex paint is the nature of the vehicle binder, that is, the acrylic or polyvinyl polymer. Beyond saying whether it is an acrylic or a polyvinyl polymer, and some formulas merely call it "latex" or "emulsion," labels usually give no details. Further, the ingredient reported on the label sometimes reads merely "latex" without indicating how much of the latex is water and how much non-volatile material. Such formulas tell little of value to users. Labels need great improvement, to give the consumer a chance to acquire the knowledge

he will require if he is to choose paint wisely, and profit from experience in the use of latex paints. CR will welcome reports from subscribers on the performance of specific brands of exterior latex paint they have used on their homes.

The following ratings of exterior latex paints are necessarily tentative; more reliable ratings will be shown at the completion of exposure tests now in progress for nearly two years. (Most seriously unsatisfactory paints will show some defects or failures in that period.)

B. Intermediate (tentative)

Du Pont 50 Acrylic (E. I. DuPont de Nemours & Co., Inc., Wilmington, Del.) To be used with *DuPont 38 Primer.*

Glidden Spread 3600 (Glidden Co., Cleveland 14) To be used with *Glidden 3651 Primer.*

Lucas Luco-Tex Acrylic (John Lucas & Co., Inc., Philadelphia) To be used with *Lucas Luco-Tex Primer.*

Master-Mixed Latex (Sears, Roebuck & Co.) To be used with *Master-Mixed Primer*, Cat. 30—595.

Sherwin-Williams Latex A-100 (The Sherwin-Williams Co., Cleveland 1) To be used with *Sherwin-Williams A-100 Wood Undercoater.*

Garden equipment—care for winter storage

Most of us, when the summer season ends, will thankfully push the lawnmower, garden tractor, fertilizer spreader, etc., into the garage, tool shed, or basement, and forget about them until next spring. While no great harm will be done to these machines in most cases by this casual treatment, it will often pay to spend a little time and effort in preparing them for their long period of disuse. A few minutes work may save some money and annoyance and perhaps a trip to the repairman when the tools are needed again.

With gasoline-powered equipment, the most important step is to drain all the gasoline from the fuel tank and carburetor (and the carburetor bowl if it has one). Fuel left in a gasoline engine will in time evaporate and leave behind a gummy substance which can clog the fuel lines and carburetor. Sometimes the easiest way to remove the gasoline is to let the engine run (in the open) until it runs out of fuel.

To prevent internal corrosion, remove the spark plug and put about 1 ounce of SAE 20 oil into the cylinder through the hole from which the spark plug was taken, and crank the engine slowly to distribute the oil. Clean the spark plug, readjust the gap, and then replace the plug. (But leave the connecting wire off and tape it so that there is no danger of the engine being started accidentally, by a child, for example.) You may at this time also change the oil in the crankcase and then clean the air filter.

Normal maintenance during the summer requires cleaning the mower after each use, and this includes removing wet and dried-out grass clippings from the housing around the cylinder, clippings that could interfere with air circulation and cause overheating. On rotary mowers one should do a particularly good job of cleaning of the underside before storage, to prevent corrosion.

Garden sprayers and fertilizer spreaders should be given special care. Unless fertilizer is washed off a spreader, it will attract moisture and cause extremely destructive corrosion. After the washing, the spreader should be thoroughly dried before storage.

Insecticides left in a sprayer or duster can corrode these tools so badly as completely to ruin them, or cause a leak. Remove the contents and make sure the sprayer or duster is completely *clean* and *dry* before storage. Hand tools, such as shovels, spades, hoes, etc., should be cleaned, the rusty spots rubbed down with steel wool, and then coated with oil or grease.

Kerosene and gasoline cans and cans used for oil and anti-freeze need special provision against rusting out of the bottom. They should be raised off the ground or floor an inch or two to permit movement of air and reduce deposition of moisture underneath. The bottoms of kerosene and gasoline cans, however, will often rust through from the inside, and with gasoline this can present a serious danger of fire or explosion. In any event, one should be careful never to store more than a small quantity of gasoline at any time, even in a garage or tool shed.

Spray starches

(*The beginning of this article is on page 2*)

after 15 launderings, starching, and ironings were satisfactory. It was found in the repeated use in CR's laboratory that all the starches performed better if a *light* spray were applied, then ironed, and the process repeated if additional stiffness was required, rather than applying a heavy spray (two passes of the spray or more) initially. The initial heavy spray favored undesirable flaking on the fabric and a build-up of starch residues on the iron.

Also, the iron had to be used at "steam" setting or lower for some brands to avoid a tendency to scorch. None of the fabrics changed color or showed any other undesirable effect.

Relative economy of starches

The consumer who has trouble figuring the cost of starch products on the grocer's shelves may be helped by the following table, which lists well-known brands:

Vegetable starches	Estimated cost per quart, approx.
Dry, usually boiled: *Argo, Faultless, Linit, Quick Elastic, Staley's*	1c
Dry, cold water: *Jiffy, Niagara*	1c
Liquid: *Jiffy, Linit, Quick Elastic, Sta-Flo, Prim, Vano*	15c
Synthetic starches	
Liquid (CMC type): *Glosstex, Texize*	35c
Liquid, "durable" (good for about 10 launderings): *Dura, Perma, Prim* Plastic, *Sage, Texize* Plastic	60-70c
Spray starches	
Vegetable and synthetic liquid: *Barcolene, Dapper, Easy-On, Glis, Reddi, Sta-Flo*	85c-$1.50

Thus it can be seen that the cost of the extra convenience is relatively high. There is no denying the convenience afforded by liquid and spray starches, however. In addition to providing stiffness, the spray starches provide a little dampening—often just enough to help the steam iron produce a good ironing job.

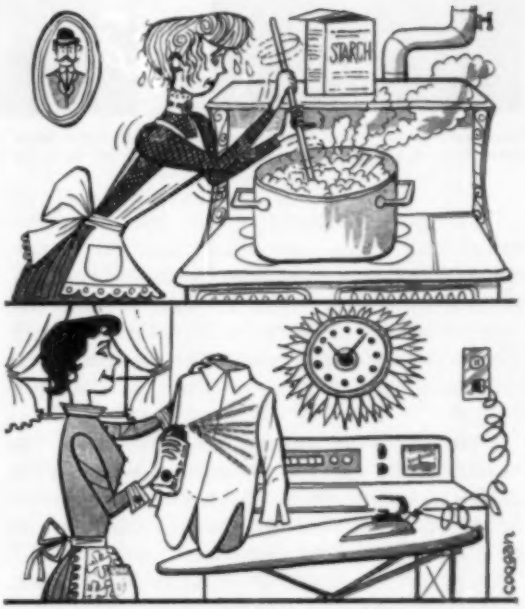
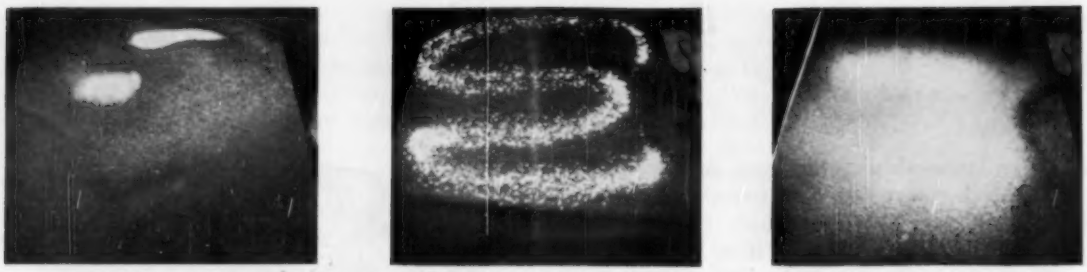


Illustration reproduced by permission of Chemical Week

All seven spray starches tested left "flakes" or blobs of starch on dark fabrics, but *Barcolene* and *Dapper* gave the most satisfactory results. All starches gave better results on dark fabrics when the cloth was rolled immediately after spraying as *Dapper* recommends. Two of the sprays, *Reddi-Starch* and *Shop Rite* private brand, left many "flakes" on both white and black fabrics.

Usually the flakes brushed off the fabrics easily. The *Reddi* and *Shop Rite* brands and *Easy-On* also left considerable starch residues on the iron that required removal; however, all of the spray starches tested left some residue on the iron. *Dapper* left a thin film of residue that was hard to remove. (Starch residues can be removed from the iron with a fine abrasive, such as *Bon Ami*, or fine steel wool pads.)

Of doubtful value for starching men's garments was the perfume in *Barcolene, Reddi, Shop Rite*, and *Sta-Flo*. The odor didn't remain long in the clothes, however.



Spray patterns of three of the starches, from left to right: Shop Rite, Reddi Starch, Barcolene. Heavy blobs of starch are likely to cause flakes of starch on the fabric and build-up of starch on the iron.

The spray patterns of the different cans were interesting (see illustrations). Some cans produced a fine, even spray, when used as recommended, 8 to 12 inches from the fabric; others produced a thin line, instead. The evenness or unevenness of the spray was especially noticeable on the dark cotton blouse.

Consumers are warned not to disregard the notice on the spray cans, some of which warn against placing them on stoves or radiators or in hot water, "Do not puncture, incinerate, or store can at temperatures over 120°F," "Keep out of reach of children," "Do not spray toward face." Aerosol cans under pressure have caused injuries, even death, and under certain conditions they can be very dangerous. The interior of a car on a hot day with windows closed will often go far above 120 degrees.

A. Recommended

Barcolene Jet (The Barcolene Co., Boston 18) 59c for 16 oz. Faintly perfumed. A few flakes on white fabrics, but flakes were easily brushed off. Little build-up on the iron.

Dapper (The Dill Co., Inc., Norristown, Pa.) 57c for 15½ oz. No noticeable odor. Few flakes, easily brushed off. Thin film build-up on the iron was difficult to remove.

Glis (Aerosol Corp. of America, Wellesley Hills, Mass.) 65c for 14 oz. Soapy odor. Little build-up on the iron.

Staley's Sta-Flo (A. E. Staley Mfg. Co., Decatur, Ill.) 69c for 16 oz. Strongly perfumed. Little build-up on the iron.

B. Intermediate

Easy-On (Boyle-Midway Inc., Cranford, N. J.) 69c for 15 oz. Mild soapy odor. Few flakes. Considerable build-up on the iron.

Reddi Starch (Simoniz Co., Chicago 16) 69c for 16 oz. Strongly perfumed; faintly blue in color. Some flakes. Considerable build-up on the iron.

Shop Rite Spray Starch (Shop-Rite private brand; distributed by Wakefern Food Corp., Eizabeth, N.J.) 39c for 15 oz. Strongly perfumed. Spray was uneven. Some flakes. Considerable build-up on the iron.

A homemaker speaks—

(The beginning of this article is on page 39)

When the holiday was over and business could resume as usual, my husband called for service. (His office is nearer to our home, so he handled this call.) A sweet young voice took the call. He did not try to tell her all the problems of the dishwasher. He asked for service and asked to be called by phone when the serviceman found it convenient to come to the house. My husband planned to let him in and tell him the details of the problems. He also wanted the dishwasher's drain line checked for dripping and the one-lever water faucet on the sink checked for binding. There were too many problems to explain to the young woman handling the telephone. He did trust her with his office telephone number so that he could be called when the serviceman was ready to do service. No call that day.

The man of the house called the service department again at 8 the next morning to restate the problem of no one at home, to

leave his phone number and to assure the service department that he would be at the house if he were called. No call before noon on the second day. At 1 p.m., he checked again. No call during the afternoon, but when we arrived home from our respective offices that evening, we found a bill for $8.10 on the kitchen table. The serviceman had been there—he had been admitted by a neighbor who had a key. She didn't know anything about the dishwasher, but she let him in. On the bill, he said: "All components checked out o.k. and no leaks occurred."

That night, I tried it again. The kitchen floor was again flooded. I stayed at home the next day and got the serviceman again. As soon as he knew the symptoms, he corrected them all. He insisted, however, that he had to collect for both calls even though the first one had accomplished nothing. Feeling that it would not help much to argue, I paid the man cash for the two calls and he receipted both invoices.

The dishwasher worked fine, but that was not the last of it. On July 25, the mail man brought a bill suggesting that I might want to keep my credit clear by paying the $8.10 for the first service call. I wrote the manager of the local service department a letter detailing all of the problems of the two calls and how I felt his department had not cooperated to make the first call a success. I indicated that I considered the first call as illegal entry of our home and that since the bill had been paid at the time of the second call, I considered a second billing as adding insult to injury. I didn't expect an answer to that letter, nor did I expect another bill!

A month later, however, another bill arrived—this one from the district credit manager. I sent him a copy of the first letter detailing the problems involved in the two calls and told him of my receipted bills.

Between bills, I also received a telephone call. Some woman asked if my dishwasher had been properly serviced. I assured her that it had been and was working quite satisfactorily, but I was not happy over the unwarranted call, the extra charge, and the fact that I was being rebilled even though I had paid the unjust charge.

"Oh," she said weakly as she quietly hung up the telephone.

Mr. Fix-it receives his orders.

The voice on the telephone was just window dressing, good will building that flopped. There were no answers to my letters. No apologies. No refund from the local appliance service manager. Eight months later, I received a second letter from the district credit manager saying ". . . May I expect your check in 7 days to clear up this account."

This just points up the problem of service to the home that is closed during the normal working day. Granted you have a lot of problems with service already, but couldn't you detail servicemen for week-end work and give them their days off during the week?

Newspapers and newsdealers work on Sunday, gasoline service stations service cars on Sunday. Drug stores sell miscellaneous items on Sunday. Restaurants operate on Sunday. Correcting a flood in the kitchen can be a lot more important than the Sunday paper or a pack of cigarettes.

Why couldn't a flooding dishwasher be serviced on Saturday or Sunday promptly and without a double charge for labor?

Why does equipment break down on week ends?

Because it gets heavy use when the family is at home catching up on the week's housekeeping. It's as simple as that. But a double source of family income does help us keep you appliance manufacturers in business, so please help us to keep our homes operating smoothly while we work out in business, too.

We hope you call a meeting of the board of directors and start some interoffice memos and directives that will take due account of how people earn the money that keeps appliance manufacturers in business.

● OFF THE EDITOR'S CHEST

Industry fights new regulations for labeling hazardous chemicals

ACCIDENTAL swallowing of poisonous materials is a serious problem with children. According to an analysis by the National Clearinghouse for Poison Control Centers, approximately 90 percent of poisoning cases over a given period involved children under the age of 5 years. Household cleaning and polishing agents caused 17 percent of all accidents; 6 percent were due to petroleum distillate products, kerosene, lighter fluid, gasoline; paints, varnishes, paint solvents, and turpentine accounted for a little over 4 percent of all cases. The remainder were due to other products. It is estimated that about half a million cases of household poisoning occur annually.

Since adults are accustomed to use many household substances correctly and safely, they often do not realize the dangerous toxic effects of misuse by little children, who are much more sensitive to poisons than adults. Back in 1927 when the Federal Caustic Poisons Act was passed, there were only 12 caustic and corrosive substances often found in the household that were required to carry certain warning labels when packaged in containers for use by the general public. When the new Federal Hazardous Substances Labeling Act was passed in July 1960, it was estimated that its regulations would require cautionary labeling of some 300,000 household items, including cleaning preparations, waxes and polishes, bleaches, detergents and chemical specialties of many kinds, if they present any hazard in their use or storage around the home.

The effective date for enforcement of the provisions of the Act was last February 1, 1961, but industry protests forced several postponements. At present the provisions of the Act that would apply penalties to manufacturers for failure to employ proper labeling have been suspended until February 1, 1962, except for products that are "highly toxic," "extremely flammable," and "flammable."

The special precautionary labeling must include the common, usual, or chemical name of the hazardous substance or of each ingredient that contributes significantly to the hazard. The signal word DANGER must appear on the label of products that are extremely flammable, corrosive, or highly toxic. The words WARNING or CAUTION must appear on all other hazardous substances. Labels must also carry in appropriate cases an affirmative statement of the principal hazards, such as Flammable, Vapor Harmful, Causes Burns, along with precautionary measures to be taken, and first-aid treatment. Labels carrying the warning POISON, with a skull and crossbones symbol, must also bear the statement Keep Out of the Reach of Children. It is important to note that those who framed the new law exempted from its effect economic poisons such as insecticides, fungicides, rodenticides, plant regulators, and related products.

The regulations proposed by the Food and Drug Administration, which is charged with enforcement of the Act, spell out the arrangement of the statements on the label and specify the size of type to be used for the various warnings. In all cases, the cautionary labels must be clearly legible. As anyone with allergies to certain substances knows who has attempted to read the ingredients on labels of many products in a grocery store or supermarket, the requirement of good legibility is a wise and necessary provision.

Industry groups, however, are protesting vociferously against these proposals. The Manufacturing Chemists' Association and the Chemical Specialties Manufacturers Association take the position that the wording of the warnings is too strong and that too many products are designated for cautionary labels that do not need them. They are apprehensive of the effect of such warnings on sales to the housewife. There has also been objection on the part of the industries involved to putting the "Danger—Poison" label on turpentine and kerosene, and to classifying epoxy resins as "strong sensitizers."

Industry spokesmen have particularly objected to the requirements about the size of the type in which the warnings appear on the label on the ground that the warnings would

be more prominent than the trade mark itself or the directions for use. One spokesman expressed the fear that "overlabeling" might lead to public apathy toward warning labels of all kinds.

It is quite understandable that industry does not want a "Danger" tag on products that, when properly used, will have no bad effects, but one of the main reasons for the passage of the new labeling law was to alert parents to the fact that many familiar household substances are dangerous to the health and lives of children who swallow or inhale them. Kerosene and furniture polish are very frequent causes of child poisoning; yet the average parent who makes regular use of products of this sort often will not realize that they have serious, even fatal, results if ingested by a small child who has found them on a low shelf or in an easily opened cupboard, or that such an incident demands immediate medical attention. The manufacturer may feel that a woman will not buy a common household product that carries a prominent warning label or the word POISON prominently. It should be pointed out, however, that if all other brands of that type of product are similarly labeled, no particular brand can be singled out for unfavorable notice, and the homemaker will have been alerted to treat such products with care and store them well out of the range of inquisitive little fingers.

The chemical industry will be ill-advised in opposing the frank and forthright labeling of any chemical or substance commonly used in and around the household that may be dangerous to health when ingested, inhaled, or otherwise handled or misused by accident or in ignorance of the hazard. Some people don't read the small type such as that usually found in the labeling of the common ingredients of processed foods. It is essential that they do so in the case of potentially dangerous chemicals.

The manufacturers of chemical specialties may protest that such labeling will restrict the development of new and valuable chemicals, but let one serious case or series of poisonings or deaths hit the headlines and they will find public opinion demanding even more restrictive regulations that will put still further restrictions on their labeling practices. If everybody in the business labels all products of a given type with the appropriate cautionary warning, then all will be in the same competitive position. Those consumers who normally don't read fine print will have been put on notice.

While the big trade groups are wrangling over the regulations of the new Act, some firms are conscientiously trying to make their contribution to reducing the toll taken by chemicals each year, by using clear, legible cautionary labels. We hope that subscribers will send us labels of these products as they come across them; such firms deserve to be given public commendation for their high regard for public welfare and safety.

Contamination of the home water supply

(*The beginning of this article is on page 24*)

The fitting which provides the air gap will usually be available from the supplier of the dishwasher, and should be installed in strict accordance with the instructions supplied.

Maintaining the purity of the water supply and providing for proper disposal of waterborne wastes, and avoiding every sort of troublesome "cross-connection" are tricky problems under some not uncommon circumstances. Home plumbing is a field in which the do-it-yourselfer must tread warily, since jobs that seem quite simple may involve complications at a time of abnormal conditions that will be recognized only by an expert or by a person with long and varied experience in piping layouts.

There are many in the plumbing business who are not always as well informed and as careful as they should be about avoidance of cross-connections and other health-related aspects of plumbing, such as provision of all needed vents for traps and waste lines. For maximum safety, every plumbing job should be performed in accordance with a standard municipal, state, or other code, and after completion should be inspected for compliance by a properly trained and supervised inspector.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: Stereo records are indicated by the symbol (S). Ratings (AA, A, B, etc.) apply first to the quality of interpretation, second to the fidelity of the recording. Most performances are available on both stereo and regular LP records.

(S)**Adam:** *Giselle.* London Symphony under Fistoulari. Mercury SR2-9011. $11.96. The complete ballet played with charm, mastery, and understanding of the style. The recording offers wide dynamic and frequency range and sounds convincingly realistic. However, two of the three phonograph cartridges used were bounced out of the groove by an exceptionally loud chord in the introduction. **AA A**

(S)**Beethoven:** *Sonatas No. 5* and *No. 9.* Yehudi and Hephzibah Menuhin. (Violin and Piano.) Capitol SG 7246. $5.98. The sublime, popular "Spring" and "Kreutzer" sonatas. But better performances of both may be found in the catalog. Mr. Menuhin, particularly, plays with little distinction for a musician of his eminence. For example, he is surpassed, I think, by Schneiderhan playing two other Beethoven sonatas (*No. 7* and *No. 10*) in the solid German manner on the new Deutsche Grammophon 138623. The Capitol disk is satisfactorily recorded. **B A**

(S)**Beethoven:** *Trio in D* (Op. 8). Heifetz, Primrose, Piatigorsky (violin, viola, cello) & **Kodaly:** *Duo for Violin and Cello.* Heifetz, Piatigorsky. RCA Victor LSC 2550. $5.98. Beethoven's early trio, a development of dance movements, stands as the most popular repertory piece for these instruments. The Kodaly work aims at a more serious audience. All of the playing is marvelous; the ensemble commendable. Acceptable recording. You may want to investigate a companion disk by the same performers on which they play beautifully (particularly Heifetz) the Beethoven *Trio in D* (OP. 9, No. 2) and the Schubert *Trio No. 2 in B Flat* (Victor LSC 2563). **AA A**

(S)**Blomdahl:** *Aniara.* Soloists of the Royal Opera, Stockholm, under Werner Janssen. 4 sides, Columbia M2S 902. $11.96. A new opera, first performed in Stockholm in May 1959, which describes a journey in outer space sometime in the future. The space craft Aniara, with 8000 persons aboard, hurtles out of the solar system into the Galaxy to death for all aboard. Much of the music sounds like "space music," employing tape and many special electronic effects. Easily recognized are twelve tone rows and jazz. It's diverting, but not much more. Magnificent performance. Particularly good use of the stereo medium by the engineers. **AA AA**

(S)**Handel:** *Great Tenor Arias.* Kenneth McKellar (tenor). London OS 25234. $5.98. At times the young Scottish tenor finds the terrain more difficult than he can conquer easily. But there are many good points about his singing and one of them is style. Included are such lovely arias as "Comfort Ye My People," "Sound an Alarm," "Where'er You Walk." Fine reproduction. **A AA**

Handel: *Trio Sonatas* for Two Oboes and Figured Bass. Melvin Kaplan and Ronald Roseman (oboes). Washington WR 420. $4.98. Agreeable music played by two oboes with the figured bass realized by a bassoon and harpsichord. The playing meets high standards in every respect and the recording is well forward, clear. **AA AA**

(S)**Liszt:** *Hungarian Coronation Mass.* Szecsody, Tiszay, Simandi, Farago (singers), with the choir and orchestra of the Budapest Coronation Cathedral under Ferencsik. Deutsche Grammophon 138668. $6.98. Liszt wrote this festive, solemn mass for the coronation of the Emperor Franz Joseph and the Empress Elisabeth. Performance close to the heart of the music. The recording could hardly be better at this stage of the art. **AA AA**

(S)**Schoenberg:** *Verklaerte Nacht.* String Sextet & **Fauré:** *La Bonne Chanson.* Martial Singher (baritone) with 5 instrumentalists. Columbia MS 6244. $5.98. Recorded at the Marlboro Music Festival. Dry, but clear sound. Both compositions have been recorded before in more moving performances, but it is a pleasure to hear Singher's French and his fine musicianship. **A A**

(S)**Strauss:** *Don Quixote.* Pierre Fournier (cello) with the Cleveland Orchestra under Szell. Epic BC 1135. $5.98. A masterpiece played with the long lyric line and controlled drama. Fournier performs the difficult solo part with rich tone and beauty of expression. An outstanding disk. Fine sonics. **AA AA**

(S)**Verdi:** *Un Ballo in Maschera.* Stella, Poggi, Bastianini, etc., under Gavazzeni. 6 sides, Deutsche Grammophon 138 680/82 SLPM. $17.94. No question this is the best engineered recording of this strange opera, even though the sound becomes less clear as the stylus travels near the innermost grooves. But artistically, there is room for another. Poggi doesn't impress one as a Gigli or Caruso. Stella doesn't toss off the fast passages with distinction, though she turns in the best performance of the principals. Bastianini sounds firm and satisfying nearly all of the time. The conducting could hardly be better. Too bad all of the singers weren't up to it. **A A**

(S)*Bob Prescott Presents Cartoons in Stereo with Cy Harrice.* Audio Fidelity DRS 7008. $5.95. Clever work by Prescott, a sound effects artist for the American Broadcasting Company. He produces a disk that shows off two-channel stereo to the nth degree. In the cartoon called "The Artillery Range," guns fire from the left and explode from the right until one circles back to its source, where it explodes. In "The Elevator," you hear the amusing sounds on various floors of a department store including the murder of the gent who wishes to register a complaint. Little music here but lots of fun for a "stereo" party. **AA AA**

Jane Morgan Sings the Great Golden Hits (vocalist). Kapp KL 1246. $3.98. Jane Morgan has a large following. This disk, and its companion called *Jane Morgan Sings the Big Hits from Broadway* (Kapp KL 1247) are likely to increase that following. Her style is simple, straightforward, her enunciation well-nigh perfect. She sobs a bit, slides into a note now and then, likes to follow the beat rather than hit it precisely, and she prefers slow tempi. These add up to the Jane Morgan style. For some tunes I like more animation. Here she sings *All the Way, Young at Heart, Catch a Falling Star, Till the End of Time,* and similar tunes. Orchestral background features muted violins. Excellent recording. **AA AA**

(S)*Latin Brass.* John Evans and the Big Band. Directional Sound 5001. $4.98. Brass, organ, piano, and plenty of percussion go to work on a Latin repertory for the benefit of the stereo owner who likes sound effects which demonstrate his hi-fi rig. Included are special arrangements of "April in Portugal," "Patricia," "Mambo Jambo," "Tequila," and similar fare. Wide channel separation, excellent fidelity. **AA AA**

Lookin' Up. The Jubilee Four (male vocal quartet). Reprise R 2006. $4.98. The quartet take standard spirituals like *Swing Low Sweet Chariot, David and Goliath, Let My People Go,* they add a percussive background and MUCH of their own arrangements—and let it rip! Well sung and recorded. **AA AA**

(S)*More Classical Music for People Who Hate Classical Music.* Boston Pops under Fiedler. RCA Victor LSC 2470. $5.98. Fiedler calls this "a handful of pieces all centered around romance." He includes the overtures to "Zampa," "Fatinitza," and "Der Freischütz," plus five short, melodic pieces that Pops audiences applaud. Heavy, though spirited attack prevails, lacking in *nuance.* Rather resonant recording, bordering on boominess. **B A**

(S)*The World's Great Waltzes.* The Clebanoff Strings. Mercury SR 60237. $4.98. Slow waltzes for dancing. Included are special arrangements of "Marcheta," "Just A-Wearyin' For You," "I Love You Truly," "Fascination," "Apple Blossom Time," and similar tunes. Strings featured. Broadly phrased. Well played and clearly recorded. **AA AA**

Ratings of Current Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 17 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), *The Exhibitor, Films in Review, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council, *The Tablet, Time, Variety.*

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Ansco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	4	2	**Ada**	*dr-c A*
—	—	—	**Adventure, The (see L'Avventura)**	
—	1	2	**Affair in Kamakura (Japanese)**	*dr A*
2	4	1	**Alakazam the Great (Japanese)**	*car-c AYC*
—	7	5	**All Hands on Deck**	*mus-com-c AYC*
—	2	1	**Amazing Mr. Callaghan, The (French)**	*mys-mel A*
—	—	3	**Anna's Sin (Italian)**	*dr A*
—	3	2	**Armored Command**	*war-dr A*
—	—	3	**As the Sea Rages (German)**	*dr A*
—	7	2	**Ashes and Diamonds (Polish)**	*war-dr A*
—	2	2	**Atlas (British)**	*adv-c AY*
—	3	1	**Bachelor in Paradise**	*com A*
—	2	1	**Back Street**	*dr-c A*
—	3	3	**Ballad of Naroyama, The (Japanese)**	*dr-c A*
—	4	4	**Battle at Bloody Beach, The**	*war-mel AY*
1	3	—	**Bernadette of Lourdes (French)**	*biog AYC*
—	2	1	**Beware of Children (British)**	*com AY*
—	2	1	**Beyond All Limits**	*dr-c A*
—	2	2	**Big Bankroll, The**	*cri-mel A*
—	4	1	**Big Gamble, The**	*dr-c A*
1	7	6	**Big Show, The**	*mel-c AY*
—	1	2	**Big Wave, The (Japanese)**	*dr A*
—	5	6	**Bimbo the Great (German)**	*mel-c AY*
—	6	2	**Black Sunday (Italian)**	*cri-dr AY*
—	4	5	**Blast of Silence**	*cri-dr A*
—	2	3	**Blood and Roses (Italian)**	*dr-c A*
—	2	1	**Blue Hawaii**	*mus-com AY*
—	3	1	**Brainwashed**	*war-dr AY*
—	2	1	**Breakfast at Tiffany's**	*dr-c A*
—	3	1	**Bridge to the Sun**	*war-dr AY*
1	4	7	**By Love Possessed**	*dr-c A*
—	6	5	**Canadians, The**	*dr-c AY*
—	3	1	**Carry on, Constable (British)**	*com AY*
—	1	2	**Cat Burglar, The**	*cri-dr AY*
—	4	5	**Cheaters, The (French)**	*dr A*
—	1	2	**Claudelle Inglish**	*dr A*
—	4	5	**Cold Wind in August, A**	*dr A*
1	4	1	**Come September**	*com-c A*
—	2	1	**Counterfeit Traitor, The**	*war-dr-c AY*
—	7	1	**Cow and I, The (French)**	*war-com AY*
—	3	1	**Cry Freedom (Filipino)**	*war-mel AY*
—	—	3	**Curse of the Undead**	*wes A*
—	7	6	**Curse of the Werewolf (British)**	*mel-c A*
—	3	2	**David and Goliath (Italian)**	*mel-c AYC*
1	5	9	**Day of the Gun, The**	*nov-c A*
1	10	2	**Days of Thrills and Laughter**	*com AYC*
—	—	3	**Dead One, The**	*cri-mel A*
—	4	1	**Deadly Companions, The**	*dr-c A*
—	3	—	**Dentist in the Chair (British)**	*com AYC*
—	3	—	**Devil at 4 O'Clock, The**	*dr A*
—	3	2	**Dondi**	*dr AY*
—	—	4	**Dr. Blood's Coffin (British)**	*mel-c AY*
—	4	2	**Eve Wants to Sleep (Polish)**	*com A*
—	—	3	**Explosive Generation, The**	*soc-dr A*
1	10	1	**Fabulous World of Jules Verne, The (Czechoslovak)**	*adv AY*
5	7	2	**Fanny**	*dr-c A*
—	—	3	**Fast Set, The (French)**	*com A*
—	6	4	**Fever in the Blood, A**	*dr A*
—	1	4	**Fidelio (German)**	*mus-dr AYC*
—	4	6	**Fiercest Heart, The**	*mel-c AY*
—	1	7	**Five Golden Hours (British)**	*com A*
—	2	5	**Five Guns to Tombstone**	*wes AY*
—	4	6	**Follow a Star (British)**	*com A*
2	6	5	**Francis of Assisi**	*dr-c AYC*
—	4	4	**Frantic (French)**	*cri-dr A*
—	2	5	**Gambler Wore a Gun, The**	*cri-mel AYC*
—	7	3	**Gidget Goes Hawaiian**	*com-c A*
—	2	3	**Girl in Room 13, The**	*mys-mel-c A*
10	2	—	**Gone With the Wind (reissue)**	*nov-c AY*
1	3	10	**Goodbye Again**	*dr A*
—	7	4	**Green Helmet (British)**	*mel AY*
2	4	1	**Greengage Summer (British)**	*dr-c A*
—	1	2	**Grouch, The (Greek)**	*dr A*
—	—	4	**Gunfight**	*wes AYC*
2	12	3	**Guns of the Navarone, The (British)**	*war-dr-c AY*
—	3	1	**Hand, The (British)**	*war-mel AY*
—	3	—	**Hatari!**	*mel-c AY*
—	3	—	**Hitler's Executioners**	*doc A*
—	5	7	**Homicidal**	*cri-mel AY*
1	4	2	**Honeymoon Machine, The**	*war-com-c AY*
3	9	3	**Hoodlum Priest, The**	*soc-dr AY*
—	3	—	**Horse with the Flying Tail, The**	*dr-c AYC*
—	2	5	**House of Fright (British)**	*dr-c A*
—	2	1	**Hustler, The**	*dr A*
—	3	—	**Invasion Quartet (British)**	*war-com AYC*
—	3	—	**Islands of the Sea**	*doc-c AYC*
—	2	1	**It Takes a Thief (British)**	*cri-dr A*

A	B	C		
—	6	2	**Joker, The (French)**	*com A*
—	3	4	**Kanal (Polish)**	*war-dr A*
—	3	—	**King in Shadow, The (German)**	*hist-dr-c A*
1	3	—	**King of Kings, The**	*hist-dr-c AY*
—	2	2	**King of the Roaring 20's**	*cri-dr A*
—	3	2	**Konga**	*sci-c AY*
—	—	—	**La Dolce Vita (see Sweet Life, The)**	
—	4	6	**Ladies' Man, The**	*com-c A*
—	3	—	**Last Rebel, The**	*hist-dr-c A*
—	—	—	**Last Sunset, The (see Day of the Gun)**	
—	9	3	**Last Time I Saw Archie, The**	*war-com AY*
—	3	8	**L'Avventura (Italian)**	*dr A*
—	1	5	**Leda (French)**	*dr-c A*
—	2	6	**Look in Any Window**	*soc-dr A*
—	—	—	**Loss of Innocence (see Greengage Summer)**	
—	7	5	**Love and the Frenchwoman (French)**	*dr A*
—	3	9	**Love in a Goldfish Bowl**	*com-c A*
—	3	—	**Love on Crooked Legs (German)**	*com AYC*
—	3	—	**Lover Come Back**	*com-c AY*
1	3	1	**Macario (Mexican)**	*fan AY*
—	1	2	**Maciste in the Land of Cyclops (Italian)**	*adv-c A*
—	1	10	**Mad Dog Coll**	*cri-mel A*
—	6	—	**Magic Boy (Japanese)**	*car-c AYC*
—	3	—	**Mailbag Robbery (British)**	*cri-mel AY*
—	7	1	**Man in the Moon (British)**	*sci-com AY*
—	3	—	**Man Who Wouldn't Talk, The (British)**	*cri-dr A*
—	1	2	**Mania (British)**	*cri-mel A*
—	2	4	**Marines, Let's Go!**	*war-mel-c A*
—	1	2	**Mark of the Devil (Mexican)**	*mel A*
—	—	3	**Mary Had a Little (British)**	*com A*
—	5	2	**Master of the World**	*sci-c AYC*
—	4	6	**Matter of Morals, A (Swedish)**	*dr A*
2	3	8	**Mein Kampf**	*biog-doc A*
—	1	2	**Mighty Crusaders, The (Italian)**	*mel-c AYC*
—	1	6	**Minotaur, The (Italian)**	*mel-c A*
3	10	4	**Misty**	*dr-c AYC*
—	4	4	**Modigliani of Montparnasse (French)**	*biog A*
—	3	—	**More Deadly than the Male (British)**	*cri-mel A*
—	4	7	**Morgan, the Pirate (Italian)**	*adv-c A*
—	2	9	**Most Dangerous Man Alive**	*sci-mel A*
1	4	6	**Naked Edge, The**	*mys-mel AY*
—	3	—	**Neapolitan Carousel (Italian)**	*mus-dr-c AY*
1	4	—	**Nikki, Wild Dog of the North**	*mel-c AYC*
—	3	—	**No Love for Johnny (British)**	*dr A*
—	5	2	**Ole Rex**	*dr-c AYC*
—	10	5	**On the Double**	*war-com-c AYC*
4	8	5	**One-Eyed Jacks**	*wes-c A*
—	2	5	**Operation Bottleneck**	*war-dr A*
—	6	6	**Operation Eichmann**	*propaganda-dr A*
2	10	1	**Parent Trap, The**	*com-c AYC*
—	4	6	**Passport to China (British)**	*mys-dr-c AY*
—	1	7	**Pharaoh's Woman, The (Italian)**	*mel-c A*
—	2	1	**Picnic**	*dr-c A*
1	2	2	**Pit and the Pendulum, The**	*cri-mel-c AY*
—	8	4	**Please Turn Over (British)**	*dr A*
2	9	5	**Pleasure of His Company, The**	*com-c AY*
—	6	7	**Portrait of a Mobster**	*cri-mel A*
—	5	3	**Posse from Hell**	*wes-c AY*
1	6	—	**Primitive Paradise**	*doc-c AY*
—	—	3	**Purple Noon (French)**	*soc-dr-c A*
—	—	3	**Queen of the Pirates (Italian)**	*adv AYC*
—	3	—	**Queen's Guards, The (British)**	*dr-c AYC*
2	5	—	**Question 7**	*propaganda-dr AYC*
7	6	2	**Raisin in the Sun, A**	*dr AY*
—	3	2	**Rebellion in Cuba**	*doc-dr AY*
—	6	7	**Return to Peyton Place**	*dr-c A*
—	3	4	**Revolt of the Slaves, The (Italian)**	*dr-c A*
—	1	12	**Right Approach, The**	*com A*
—	5	6	**Ring of Fire**	*mel-c A*
—	6	4	**Rocco and His Brothers (Italian)**	*dr A*
—	3	2	**Rocket Attack, U.S.A.**	*war-mel AY*
—	3	—	**Rooftops of New York**	*doc-c A*
—	12	3	**Romanoff and Juliet**	*dr-c AYC*
1	9	4	**Saturday Night and Sunday Morning (British)**	*dr A*
—	3	1	**Scampolo (German)**	*mel-c A*
—	3	2	**Scream of Fear (British)**	*mys-mel AY*
—	2	1	**Season of Passion (British)**	*dr A*
—	—	3	**Secret of Monte Cristo, The**	*adv-c AYC*
1	7	2	**Secret Partner, The (British)**	*mys-mel AY*
—	7	6	**Secret Ways, The**	*mys-mel A*
—	4	2	**Secrets of Women (Swedish)**	*dr A*
—	—	3	**See Naples and Die (Italian)**	*dr A*
—	5	4	**Shadow of the Cat, The (British)**	*mys-mel AY*
—	8	4	**Shadows**	*soc-dr A*
—	1	2	**She Walks by Night (German)**	*mel A*
—	3	1	**Silent Call, The**	*dr AYC*
—	—	3	**Sins of Mona Kent, The**	*dr-c A*
—	1	2	**Sixth Man, The**	*war-dr AY*
—	—	6	**Snake Woman, The (British)**	*mel AYC*
—	9	4	**Snow White and the Three Stooges**	*com-c AYC*
—	3	1	**Spessart Inn, The (German)**	*adv-c AY*
—	3	1	**Splendor in the Grass**	*dr-c A*
—	2	6	**Steel Claw (Filipino)**	*dr-c AY*
—	7	2	**Stop Me Before I Kill (British)**	*soc-dr A*
—	1	2	**Summer and Smoke**	*dr-c A*
—	1	2	**Susan Slade**	*dr-c A*
1	6	5	**Sweet Life, The (Italian)**	*dr A*
—	2	1	**Taiga (German)**	*war-dr A*
—	3	3	**Take a Giant Step**	*dr A*
2	6	4	**Tammy, Tell Me True**	*com-c AY*
—	4	3	**Teacher and the Miracle, The (Italian)**	*dr AYC*
—	3	—	**Teenage Millionaire, The**	*mus-com AYC*
—	3	2	**They Were Ten (Israeli)**	*dr A*
—	4	3	**Thief of Bagdad (Italian)**	*adv-c A*
—	—	3	**Three on a Spree (British)**	*com A*
1	3	—	**Thunder of Drums, A**	*war-dr-c A*
—	3	2	**Time Bomb (Franco-Italian)**	*mys-mel AY*
—	7	1	**Trouble in the Sky (British)**	*dr AYC*
1	4	5	**Truth, The (French)**	*dr A*
—	2	5	**20,000 Eyes**	*cri-mel A*
—	3	—	**288 Stournara Street (Greek)**	*com A*
1	5	9	**Two Loves (British)**	*dr-c A*
—	6	3	**Two Rode Together**	*mel-c AY*
—	11	1	**Two Women (Italian)**	*war-dr A*
—	6	3	**Violent Summer (Italian)**	*war-dr A*
1	6	6	**Voyage to the Bottom of the Sea**	*adv-c AY*
—	1	11	**Warrior Empress, The (Italian)**	*adv-c A*
—	4	—	**Watch Your Stern (British)**	*war-com AYC*
—	—	5	**When the Clock Strikes**	*cri-mel AY*
1	3	4	**White Nights (Italian)**	*dr AY*
—	5	6	**Wild in the Country**	*mus-com-c AY*
—	—	3	**Wild Love (Italian)**	*dr A*
—	4	1	**Wings of Chance (Canadian)**	*dr-c AYC*
—	2	3	**You Have to Run Fast**	*cri-mel AYC*
1	7	8	**Young Savages, The**	*soc-mel AY*

The Consumers' Observation Post

(*Continued from page 4*)

HOMEMADE BARBECUE GRILLS can be a menace to the family's health if they are not carefully chosen. The Syracuse district office of the New York State Department of Health, investigating a report of alleged food poisoning in a family of two adults and two children, discovered that the steak for the meal which caused the illness had been cooked at an outdoor fireplace. The grill used was an old refrigerator shelf. Cadmium poisoning was immediately suspected and a chemical analysis of the plating remaining on the unburned portions of the grill revealed cadmium in greater than trace amounts. Grills for outdoor cooking should be picked with care to avoid toxic coatings such as cadmium. Galvanized (zinc-coated) wire should not be used either, since any significant amount of zinc is somewhat toxic in food.

* * *

NYLON STOCKINGS impregnated with mink oil, turtle oil, royal jelly, and lanolin were announced in several publications last fall. Before we had an opportunity to locate this new and wonderful development, it was picked up by the Food and Drug Administration for misbranding. Among the claims objected to were: "Beautique Leg Stockings *** hosiery with a built-in beauty treatment *** that flatters your legs while massaging them with a softly scented emollient." We never got to try them out.

* * *

WATER USED FOR BREWING COFFEE should not be treated in any way. According to a study by the Coffee Brewing Institute, the use of softened water produces a less satisfactory beverage than untreated water. If odors, such as chlorine or hydrogen sulfide, are present in the water, they should be removed with an activated carbon filter. Hardness of water, if the natural hardness is less than 9 grains per gallon or 150 ppm. (parts per million), is not likely to have an adverse effect on the quality of the brew.

* * *

EFFICIENT, WELL-TRAINED SERVICEMEN for major household appliances are in great demand. In order to relieve the critical shortage, the Akron, Ohio, public school system is launching a 14-week training program for presently employed servicemen and beginners. The course will include 24 hours of basic electricity, 32 hours of basic refrigeration, and 52 hours of appliance shop practice, according to Home Furnishings Daily. Experienced appliance servicemen will not be required to take the shop practice course. Local dealers are supplying the appliances to be worked on and are helping to finance the program. After the course has been completed by a goodly number, appliance servicing in Akron ought to improve considerably. We'll be glad to hear from Akron subscribers on the subject.

Mind if we crow a bit ? ? ?

The new 1961-62 ANNUAL is off the press! This is a real consumers' encyclopedia that rates hundreds of products from automobiles to washing machines by brand name on the basis of scientific tests or expert examination. Its 224 pages, conveniently indexed, are the key to better buying.

The big ANNUAL BULLETIN is not included in a subscription to CONSUMER BULLETIN, but there is a special combination rate for the two. Just turn the page for prices and a handy order form.

BURLAP is not just an old potato sack; it's a fashionable fabric for skirts, jackets, coats, bags, and hats. It is also used for draperies and café curtains. The fiber is jute, most of which comes from India, where it is turned out in a natural shade. The National Institute of Drycleaning reports that the bleaching, dyeing, and printing are done by American converters. Burlap has a characteristic objectionable odor, that may be treated with chemicals to remove or reduce its pungency. Its stiffness can also be modified by treatment. The NID reports that dry cleaning the fabric is something of a problem. Although it looks heavy and durable, it must be handled like a fragile fabric. It wrinkles easily and sheds lint. Dyes crock and rub off during wear and show streaks in cleaning. It is impossible for the dry cleaner to reshape a garment that has stretched or sagged out of shape. If it has a peculiar, pungent odor, it cannot be removed by the cleaning process. As one manufacturer put it: "Burlap has one saving virtue . . . it sells."

* * *

THOSE SMALL DEVICES CALLED AERATORS that fit into a faucet to keep the water from splashing in the sink have hidden dangers. According to a study at the University of California (Los Angeles) Medical Center, aerators may become contaminated with the drug-resistant germ Pseudomonas Aeruginosa. Very young infants, debilitated or aged patients, and those with surgical wounds are particularly susceptible to these bacteria. In a routine inspection of hospital aerators in faucets of hand wash and utility sinks, the screens were found to be contaminated and the hot and cold water from the taps passing through the screens was found to contain the organism. Thus, hands or equipment washed in the sinks would be contaminated. Removal of such devices from hospital sinks was suggested as the safest course. Removal of a device of this type, if installed in a home, might be wise, though the problem may be of less importance in the average home.

* * *

CARBONATED BEVERAGES have been exempted from the labeling provisions of the Food, Drug, and Cosmetic Act since January 21, 1941, on the assumption that official standards specifying the ingredients of soft drinks would be established. Since there is no evidence that such standards will be adopted in the forseeable future, the Food and Drug Administration will require that all non-alcoholic carbonated beverages bear a declaration of their ingredients on the label after June 15, 1962. Who knows, perhaps some day we'll find out what Coca Cola really contains.

* * *

TIPS ON MOVING are offered in a little pamphlet that provides a check list of things to do before leaving your old location and what should be done at once on arriving at your new home. It's available without charge from: American Express Co., Dept. T/C, 65 Broadway, New York 6.

Consumer Bulletin

WASHINGTON, NEW JERSEY

Please enter my order as checked. I am enclosing my check (or money order) for $_____.

Begin subscription with _____ issue.

NAME _____

STREET _____

CITY & ZONE _____ STATE _____

10-61-N

Please check your preference:

☐ I enclose $7 (Canada & foreign, $7.20) for one year's subscription to Consumer Bulletin monthly (12 issues) AND the big 224-page Annual Bulletin, off the press September 1961.

☐ New ☐ Renewal

☐ I enclose $5 (Canada & foreign, $5.20) for one year's subscription to Consumer Bulletin monthly (12 issues).

☐ New ☐ Renewal

☐ I enclose $2.50 (Canada & foreign, $2.75) for a copy of the big Annual Bulletin alone, off the press September 1961.

A homemaker speaks—

Why I'm unhappy with the serviceman

ANONYMOUS*

APPLIANCE service is something everyone is talking about and quite a few are doing something to improve it.

Family magazines discuss service problems as being "all her fault" because the homemaker doesn't read her instruction books and use her intelligence before placing a service call. Be that as it may!

Servicemen gripe because they say homemakers don't have any intelligence. That is not the problem. Push buttons are supposed to be the "brains" in equipment, we are told; we are paying for push-button automaticity, so when we homemakers push buttons, we want them to work. And manufacturers and servicemen should see that they do.

You appliance manufacturers are discussing service problems in meetings and trade publications. You admit you must coordinate engineering, manufacturing, and service to reduce service liability of products. Servicemen must be better trained. You are trying to establish trade and vocational schools in the various regions. You are also beginning to face up to the fact that service deserves an equal status with sales. You worry over availability of parts and quicker shipping of parts to avoid the irritations of stalled equipment. You know—you've been told often enough—how a missing part compounds the family irritations, day after day and week after week, if an automatic washer is out of kilter for six weeks.

Freedom from the need for service would be wonderful, but let's face it, men! Even the wonderful one-horse shay finally gave way. There's still one service problem you haven't faced yet and it needs to be dealt with. Since we're not likely to be free of the need for service, let's look at this new problem.

How to get service in the home that is locked up all day. The homemaker is out earning that second paycheck that helps buy all this wonderful automatic equipment that gives her so much time. When can *she* get service?

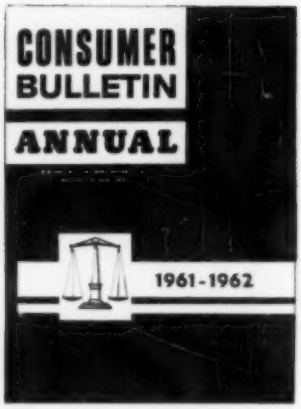
And the foul-ups that do occur when she tries for service! These take time, too. The extensive arrangements she must go through to leave a key for the serviceman to get into her house. But then does he know what the problem is when he does get into a no-one-at-home house? Let me tell you of just one such experience.

The dishwasher dumped a load of water on the floor. I dashed to open the door to stop all action, but water continued to flow into the dishwasher and onto the floor. My husband dashed to the basement to turn the water off. Turning off all the water into the house evidently released pressure in the dishwasher line so that when the water was turned on again the dishwasher valve had adjusted itself and closed. Anyway, the flood was stopped and mopped. I did dishes by hand over a July Fourth holiday week end, which is much too primitive for me.

(*Concluded on page 30*)

*(On account of I may have to call him again soon.)

Just off the press



The consumer's guide to wise buying! CR's famous ANNUAL with 224 fact-filled pages—specific information on products rated by BRAND NAME and much practical buying advice on hundreds of items. Conveniently indexed for ready reference. Get in the habit of looking it up in the ANNUAL before making your decision on what brand to buy:

There is a convenient order blank on page 38 for new subscribers.

COMING IN FUTURE BULLETINS

Electric frypans

Portable typewriters

Cole Steel

Hermes

Remington

Royal

Smith-Corona

Underwood-Olivetti

Television receivers

Admiral

DuMont

General Electric

Packard-Bell

Sears

Zenith

Polaroid electric-eye cameras

Model J-66

Model 900

Vitamin preparations

Consumer Bulletin

The pioneer consumer magazine, testing and reporting on products since 1928.

Published by Consumers' Research, Inc., Washington, New Jersey,
a non-profit organization serving consumers, with no support from business or industry.

61.100